

PROJECT SUMMARY

MUNICIPAL ADDRESS:	#17, 240023 FRONTIER CRESC., ROCKY VIEW COUNTY, ALBERTA. SE - 06 - 24 - 28 W4M
LEGAL DESCRIPTION:	LOT: 17, PLAN: 1312804 CONDOMINIUM PLAN 1312804-2 UNIT A
ZONING:	DC-133, (B-IC: INDUSTRIAL CAMPUS BUSINESS)
PROJECT DESCRIPTION:	WAREHOUSE / OFFICE WITH NEW SECOND FLOOR
SCOPE OF WORK:	INTERIOR PARTITIONING
AREA OF BUSINESS:	163 sq.m. (1,750 sf)

BUILDING CODE ANALYSIS

MAJOR OCCUPANCY CLASSIFICATION:	GROUP F -DIV 2 (MED. HAZARD INDUSTRIAL)
BUILDING CODE CLASSIFICATION:	ABC 3.2.2.76 (ABC 2014) GROUP F, DIV 2, UP TO 3 STOREYS
CONSTRUCTION TYPE:	COMBUSTIBLE OR NON COMBUSTIBLE CONSTRUCTION
BUILDING FOOT PRINT:	983.8 sq.m. (10,590 sf) - BLDG 2A PHASE #2
BUILDING HEIGHT:	TWO STOREYS
FACING STREET:	TWO STREETS
CONSTRUCTION AREA:	163 sq.m. (1,750 sf)
SPRINKLERS:	NO
FIRE ALARM:	NO
EMERGENCY LIGHTING:	YES
EXIT SIGNS:	YES

CONSTRUCTION ASSEMBLIES

FLOOR ASSEMBLIES:	MAIN: 6" CONCRETE SLAB ON GRADE. 45 MIN. F.R.R. UPPER: 45 MIN. F.R.R.
ROOF ASSEMBLIES:	METAL ROOF. 45 MIN. F.R.R.
LOAD BEARING WALLS, COLUMN AND ARCHES SUPPORTING:	MINIMUM 45 MIN. F.R.R.
(REFER TO BASE BUILDING DRAWINGS)	

DOOR SCHEDULE

TAG	QUANTITY	DOOR					FRAME		REMARKS
		SIZE	TYPE	FIRE	MAT.	FIN.	MAT.	FIN.	
D1	1	3'-0" X 7'-0"			ALUM / GLASS	ANOD.	ALUM	ANOD.	STOREFRONT DOOR, WEATHERSTRIP, KEYED LOCK (EXISTING)
D2	2	3'-0" X 7'-0"			WOOD	PAINT	WOOD	PAINT	UNDERCUT DOOR, S/S LATCH AND HARDWARE, PRIVACY LOCK
D3	3	3'-0" X 7'-0"			WOOD	PAINT	WOOD	PAINT	UNDERCUT DOOR, S/S HANDLE AND HARDWARE
D4	1	12'-0" X 14'-0"	O.H.		METAL	PAINT	METAL	PAINT	OVER HEAD DOOR. (EXISTING)
D5	2	3'-0" X 7'-0"		45 MIN.	METAL	PAINT	METAL	PAINT	U/C DOOR WITH FIRE RATED WIRED GLASS AND SELF CLOSER, KEYED LOCK
D6	1	3'-0" X 7'-0"			METAL	PAINT	METAL	PAINT	STORE BACK DOOR, WEATHERSTRIP, KEYED LOCK (EXISTING)
D7	1	3'-0" X 7'-0"		45 MIN.	METAL	PAINT	METAL	PAINT	U/C DOOR, S/S HANDEL AND HARDWARE AND SELF CLOSER

GENERAL NOTES

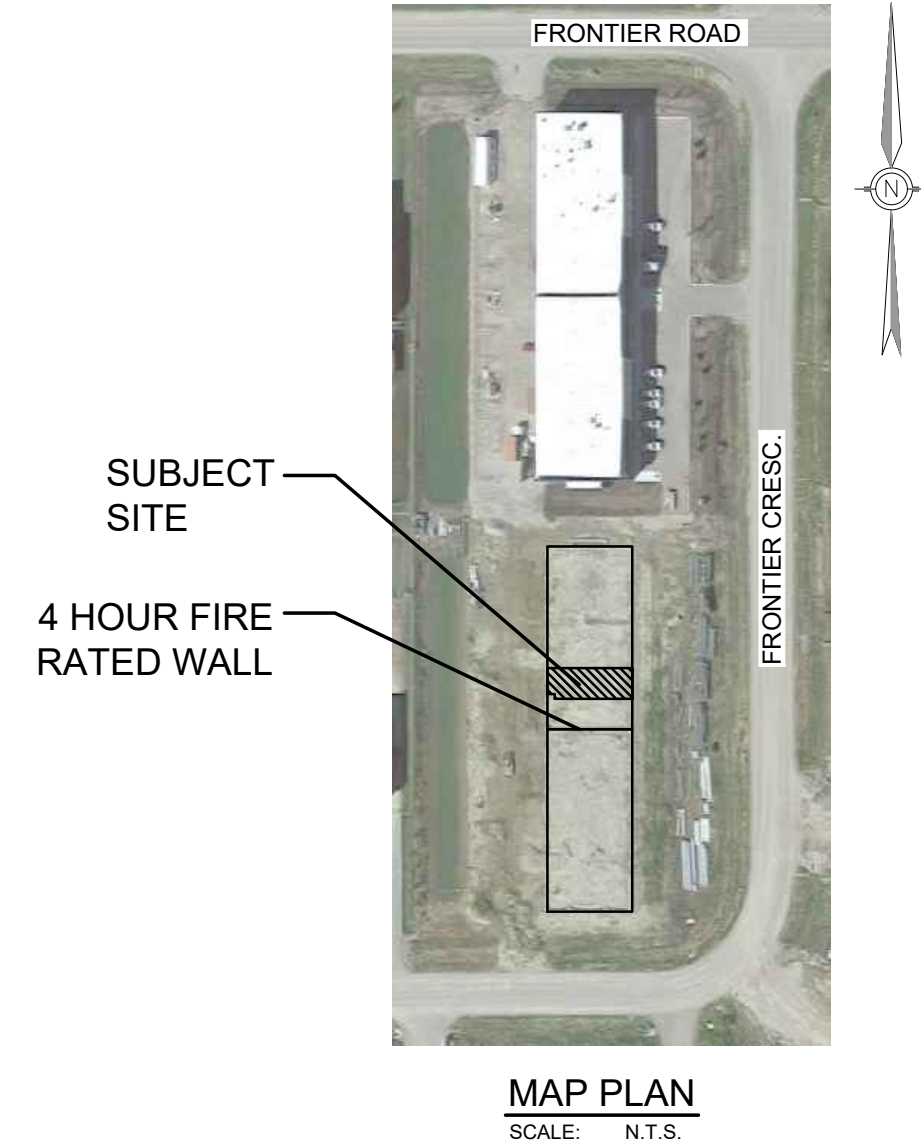
- 1) THE FOLLOWING NOTES ARE TO BE INCLUDED WITH AND BECOME PART OF THE ATTACHED DRAWINGS.
- 2) ALL WORK CARRIED OUT SHALL CONFORM TO ALBERTA BUILDING CODE LATEST EDITION
- 3) CONTRACTOR AND SUB-CONTRACTORS SHALL VERIFY ALL DIMENTIONS, LINES, EXISTING SERVICES AND OTHER INFORMATION PRIOR TO COMMENCING WORK AND REPORT ANY DISCREPANCIES TO THE DESIGNER.
- 4) DO NOT SCALE DRAWINGS
- 5) CONTRACTOR SHALL ENSURE THAT ALL WORK CARRIED OUT CONFORMS TO MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS, AND IS PERFORMED WITH CARE AND DILLIGENCE ACCORDING TO GOOD BUILDING PRACTICES.
- 6) WHERE ALTERNATE PRODUCTS, MATERIALS OR METHODS ARE PROPOSED; COMPLETE AND APPROPRIATE DETAILS, LITERATURE AND SAMPLES SHALL BE SUBMITTED TO THE DESIGNER FOR REVIEW AND APPROVAL PRIOR TO ORDERING OR FABRICATION.
- 7) CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS, INSURANCE AND WCB PAYMENT.
- 8) OPENING SIZES FOR MANUFACTURED COMPONENTS ARE NOMINAL SIZES ONLY. VERIFY WITH SUPPLIER OR MANUFACTURER.
- 9) CONTRACTOR SHALL PROVIDE AND PAY FOR 'X-RAY' OR OTHER TESTS WHICH ARE NECESSARY TO DETERMINE EXISTING EMBEDDED AND HIDDEN BUILDING COMPONENTS PRIOR TO CUTTING THROUGH WALLS AND FLOORS. CONTRACTOR TO BE RESPONSIBLE FOR ANY DAMAGE ARISING FROM CUTTING AND FOR THE COST OF REPAIRS.
- 10) CONTRACTOR TO INFORM BUILDING SUPERINTENDENT OF THE WORK AND TO OBTAIN OWNER'S APPROVAL AS REQUIRED PRIOR TO THE START OF CONSTRUCTION.
- 11) WORK TO BE CARRIED OUT WITH MINIMAL DISRUPTIONS TO NORMAL BUILDING OPERATIONS AND TO OTHER TENANTS.
- 12) ANY WORK REQUIRING CONNECTIONS TO EXISTING BUILDING SYSTEM SHALL BE CO-ORDINATED WITH THE BUILDING SUPERINTENDENT.
- 13) ALL WORK AND PROCEDURES TO BE PERFORMED IN ACCORDANCE WITH THE 'LEASE AGREEMENT'.
- 14) CONTRACTOR SHALL PROVIDE, MAINTAIN, AND PAY FOR INSURANCE COVERAGES FOR 'GENERAL LIABILITY AND PROPERTY' AS SET FORTH BY THE LANDLORD AND TENANT UNLESS OTHERWISE STIPULATED BUT NOT RESTRICTED TO THE ABOVE.
- 15) REPORT ANY DISCREPANCIES IN DRAWINGS TO THE DESIGNER.
- 16) REPORT ANY DISCREPANCIES AND INCONSISTENCIES BETWEEN DRAWINGS AND SITE CONDITIONS TO THE DESIGNER.
- 17) DOCUMENT ALL CHANGES TO DRAWINGS AND PROVIDE 'AS-BUILT' DRAWINGS TO THE TENANT AT COMPLETION OF CONSTRUCTION.
- 18) ~~ALL MODIFICATION WORK ON EXISTING BUILDING SPRINKLER SYSTEM SHALL CONFORM TO NFPA 13.~~

ROOM FINISH SCHEDULE

<u>STAIR VESTIBULE (FIRE RATED)</u>	<u>UPPER FLOOR OFFICE</u>
WALLS - PAINTED GWB	WALLS - PAINTED GWB
FLOOR - TILE	FLOOR - CARPET
BASE - TILE	BASE - CARPET
CEILING - OPEN	CEILING - OPEN
(FIRE RATE UNDER SIDE OF STAIR)	
<u>MAIN FLOOR WAREHOUSE AREA</u>	<u>UPPER FLOOR MECH. ROOM (FIRE RATED)</u>
WALLS - PAINTED GWB /BARE CONCRETE	WALLS - PAINTED GWB
FLOOR - BARE CONCRETE	FLOOR - TILE
BASE - NIL	BASE - TILE
CEILING - OPEN / PAINTED GWB	CEILING - OPEN
<u>WASHROOM</u>	
WALLS - PAINTED GWB	
FLOOR - TILE	
BASE - TILE	
CEILING - PAINTED GWB	

STANDARD NOTES

- 1) ONE SET OF LANDLORD APPROVED DRAWINGS TO BE KEPT ON SITE AND AVAILABLE FOR CHECKING AT ALL TIMES DURING CONSTRUCTION.
- 2) ALL MATERIALS TO MEET FLAME SPREAD RATING REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
- 3) DEMISING WALLS ARE NOT DESIGNED TO ACCOMMODATE LOADING. ALL FIXTURES MUST BE FLOOR SUPPORTED.
- 4) ~~ALL QUARRY TILE FLOORS MUST HAVE CONTROL JOINTS ALIGNING WITH BASE BUILDING FLOOR JOINTS.~~
- 5) DRYWALL CEILING MUST HAVE ACCESS PANELS TO ALLOW ACCESS FOR BUT NOT LIMITED TO REHEAT COILS, V.A.V. BOXES, ELECTRICAL JUNCTION BOXES OR PLUMBING CLEAN OUTS. REFER TO ENGINEERING DRAWINGS FOR LOCATIONS.
- 6) ~~MALL FLOOR FINISH TO BE EXTENDED TO CLOSURE LINE, BY TENANT. ALL JOINTS IN THE TENANT'S FLOORING PATTERN MUST BE CONSISTENT WITH THE LANDLORD'S FLOORING PATTERN.~~
- 7) TENANT CONTRACTOR MUST APPLY FOR AND PICK UP BUILDING PERMIT FROM TOWN AUTHORITIES AND PAY FOR SAME PRIOR TO COMMENCING WORK.
- 8) PRIOR TO CUTTING OR CORING CONCRETE FLOORING, THE TENANT'S CONTRACTOR MUST CHECK FLOOR FOR ANY ELECTRICAL, MECHANICAL OR EQUIPMENT LOCATIONS. ANY PENETRATION THROUGH FLOOR MUST BE WATERTIGHT.
- 9) TENANT CONTRACTOR MUST CHECK WITH TENANT COORDINATOR AND PICK UP RULES AND REGULATIONS PRIOR TO ANY CONSTRUCTION.
- 10) ~~TENANT CONTRACTOR MUST ENSURE THAT THE SPRINKLER COVERAGE COMPLIES WITH NFPA 13. PROOF OF ACCEPTANCE OF COVERAGE TO BE PROVIDED TO TENANT COORDINATOR.~~
- 11) TENANT CONTRACTOR SHALL OBTAIN ALL REQUIRED BUILDING PERMITS (BUILDING, ELECTRICAL, PLUMBING, HVAC) PRIOR TO COMMENCEMENT OF WORK AND PROVIDE PROOF TO TENANT COORDINATOR. CONTRACTOR SHALL ALSO FURNISH TO TENANT COORDINATOR FOR APPROVAL PRIOR TO CONSTRUCTION THE FOLLOWING:
- CONSTRUCTION SCHEDULES
- LIST OF ALL SUB-CONTRACTORS
- CERTIFICATE OF INSURANCE
- ~~SIGN DETAILS~~



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Consultant

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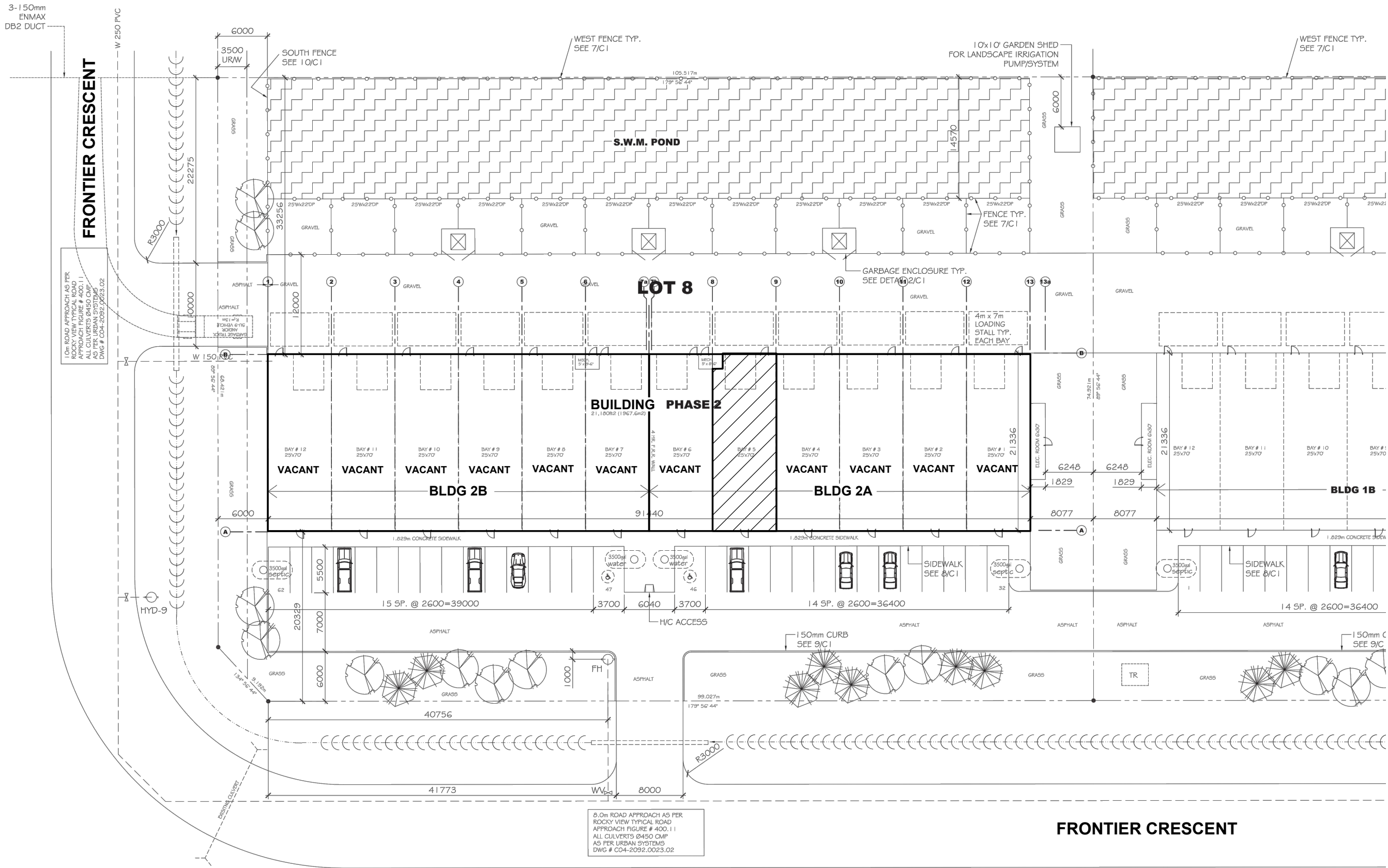
AUG 02, 2018
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Revisions
No. Description Date
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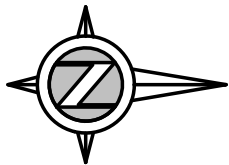
Project
MONT AIR
HEATING
UNIT 17,
240023 FRONTIER CRESCENT,
ROCKY VIEW, ALBERTA

Drawing Title
PROJECT
SUMMARY, NOTES,
SCHEDULES AND
MAP PLAN

Drawn By: C. L. Date: JULY 2018
Designed By: A. NG Scale: As Shown
Job Number: 00000
Drawing Number: A-0.0 Rev. No. 0



SITE PLAN
SCALE: 1 : 500



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Stamp

AUG 02, 2018
FOR BP

Revisions		
No.	Description	Date
0		

Project

MONT AIR
HEATING

UNIT 17,
240023 FRONTIER CRESCENT,
ROCKY VIEW, ALBERTA

Drawing Title

SITE PLAN

Drawn By: C. L. Date: JULY 2018

Designed By: A. NG Scale: As Shown

Job Number: 00000

Drawing Number: A-0.1 Rev. No. 0



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AUG 02, 2018
FOR BP

Revisions		
No.	Description	Date
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Project

MONT AIR
HEATING

UNIT 17,
240023 FRONTIER CRESCENT,
ROCKY VIEW, ALBERTA

Drawing Title

PROPOSED
FLOOR PLAN
- MAIN FLOOR

Drawn By: C. L. Date: JULY 2018

Designed By: A. NG Scale: As Shown

Job Number
00000

Drawing Number

A-1.0

Rev. No.

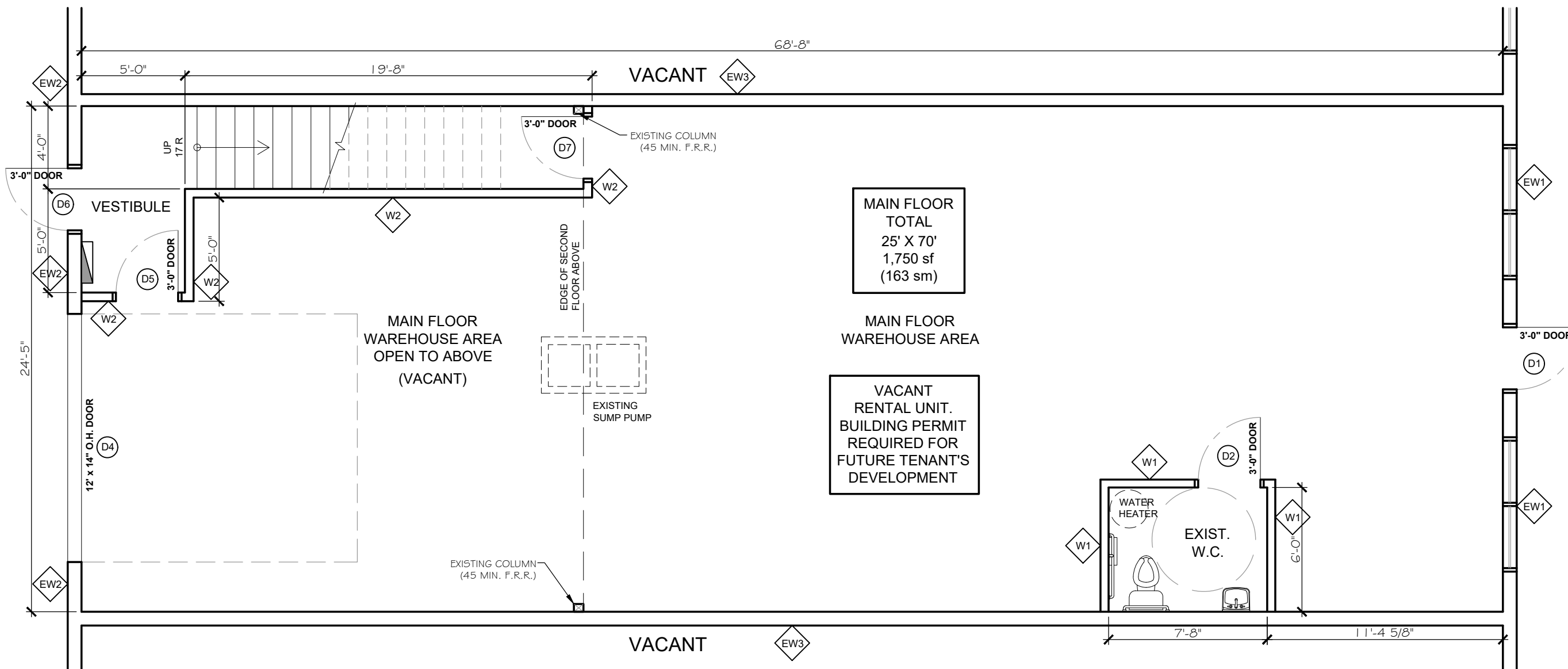
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WALL TYPES SCHEDULE

- EW1** EXISTING EXTERIOR FRONT WALL
- METAL WALL CLADDING / STONE
 - 2X6 STEEL STUDS @ 16" O/C
 - R-20 BATT INSULATION
 - 1 LAYER OF 1/2" GWB ON INSIDE
 - FINISH AS PER ROOM SCHEDULE
- EW2** EXISTING EXTERIOR BACK WALL (1 HR. F.R.R.)
- METAL WALL CLADDING
 - ENGINEERED STEEL COLUMNS
 - FURRING BAR @ 16" O/C
 - R-20 BLANKET INSULATION
 - 2 LAYERS OF 5/8" TYPE "X" GWB ON INSIDE
 - FINISH AS PER ROOM SCHEDULE
- EW3** EXISTING DEMISING WALL (2 HR. F.R.R.)
ULC # W414
- 2 LAYER OF 1/2" TYPE "X" GWB ON BOTH SIDES
 - 3 5/8" METAL STUDS @ 16" O.C
 - ACOUSTIC BATT INSULATION
 - FINISH AS PER ROOM SCHEDULE

- W1** NEW INTERIOR WALL
- 1 LAYER OF 1/2" GWB ON BOTH SIDES
 - 4" WOOD STUDS @ 16" OC
 - ACOUSTICAL BATT INSULATION
 - FINISH AS PER ROOM FINISH SCHEDULE

- W2** NEW INTERIOR WALL (1 HOUR F.R.R.)
- 1 LAYER OF 5/8" TYPE "X" GWB ON BOTH SIDES
 - 4" WOOD STUDS @ 16" OC
 - FINISH AS PER ROOM FINISH SCHEDULE



PROPOSED FLOOR PLAN
- MAIN FLOOR

SCALE: 3/16" = 1' - 0"





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FOR BP

Revisions		
No.	Description	Date
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Project

MONT AIR
HEATING

UNIT 17,
240023 FRONTIER CRESCENT,
ROCKY VIEW, ALBERTA

Drawing Title

PROPOSED
FLOOR PLAN
- UPPER FLOOR

Drawn By: C. L. Date: JULY 2018

Designed By: A. NG Scale: As Shown

Job Number: 00000

Drawing Number: A-1.1 Rev. No.

0

WALL TYPES SCHEDULE

EW1 EXISTING EXTERIOR FRONT WALL

- METAL WALL CLADDING / STONE
- 2X6 STEEL STUDS @ 16" O/C
- R-20 BATT INSULATION
- 1 LAYER OF 1/2" GWB ON INSIDE
- FINISH AS PER ROOM SCHEDULE

EW2 EXISTING EXTERIOR BACK WALL (1 HR. F.R.R.)

- METAL WALL CLADDING
- ENGINEERED STEEL COLUMNS
- FURRING BAR @ 16" O/C
- R-20 BLANKET INSULATION
- 2 LAYERS OF 5/8" TYPE "X" GWB ON INSIDE
- FINISH AS PER ROOM SCHEDULE

EW3 EXISTING DEMISING WALL (2 HR. F.R.R.) ULC # W414

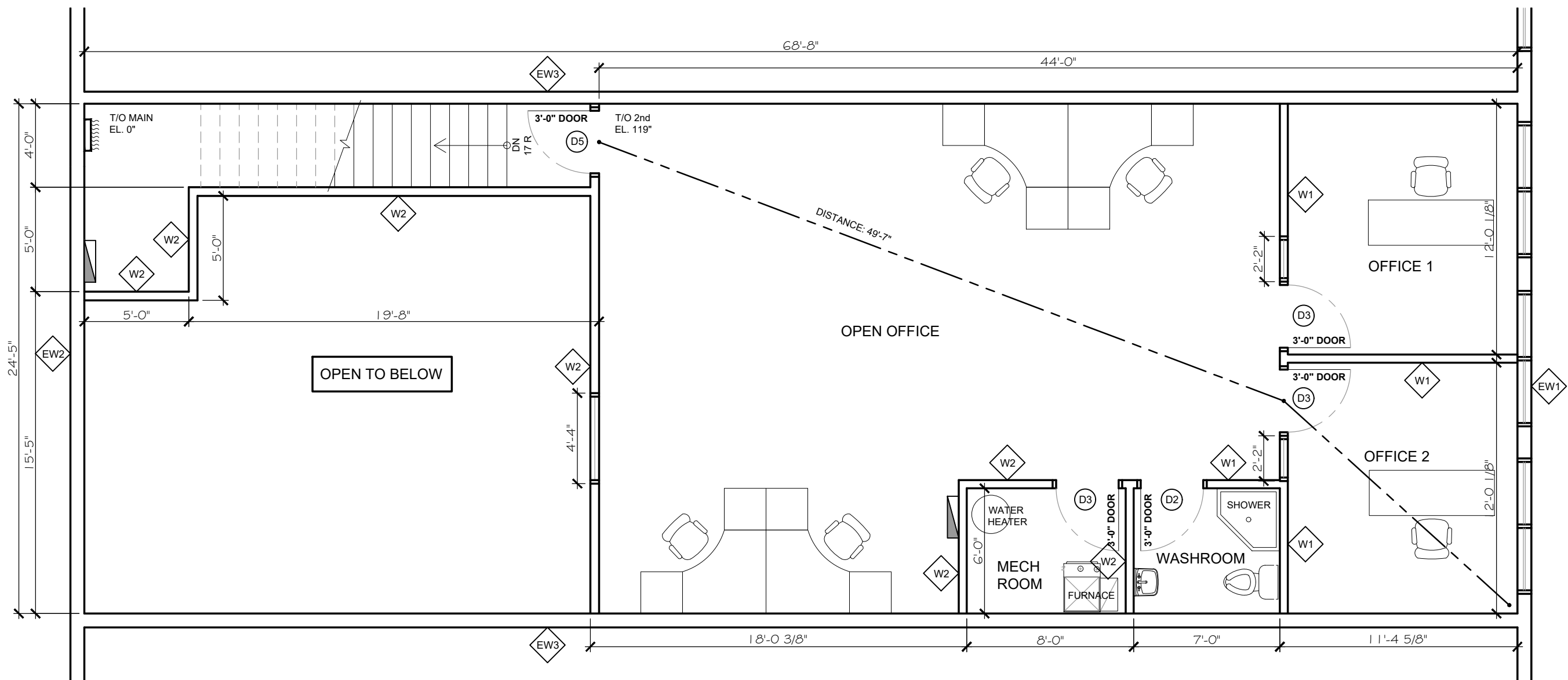
- 2 LAYER OF 1/2" TYPE "X" GWB ON BOTH SIDES
- 3 5/8" METAL STUDS @ 16" O.C
- ACOUSTIC BATT INSULATION
- FINISH AS PER ROOM SCHEDULE

W1 NEW INTERIOR WALL

- 1 LAYER OF 1/2" GWB ON BOTH SIDES
- 4" WOOD STUDS @ 16" OC
- ACOUSTICAL BATT INSULATION
- FINISH AS PER ROOM FINISH SCHEDULE

W2 NEW INTERIOR WALL (1 HOUR F.R.R.)

- 1 LAYER OF 5/8" TYPE "X" GWB ON BOTH SIDES
- 4" WOOD STUDS @ 16" OC
- FINISH AS PER ROOM FINISH SCHEDULE



PROPOSED FLOOR PLAN - UPPER FLOOR

SCALE: 3/16" = 1' - 0"





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FOR BP

Revisions		
No.	Description	Date
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Project

MONT AIR
HEATING

UNIT 17,
240023 FRONTIER CRESCENT,
ROCKY VIEW, ALBERTA

Drawing Title

REFLECTED
CEILING PLAN
- MAIN FLOOR

Drawn By: C. L. Date: JULY 2018

Designed By: A. NG Scale: As Shown

Job Number
00000

Drawing Number
A-2.0

Rev. No.

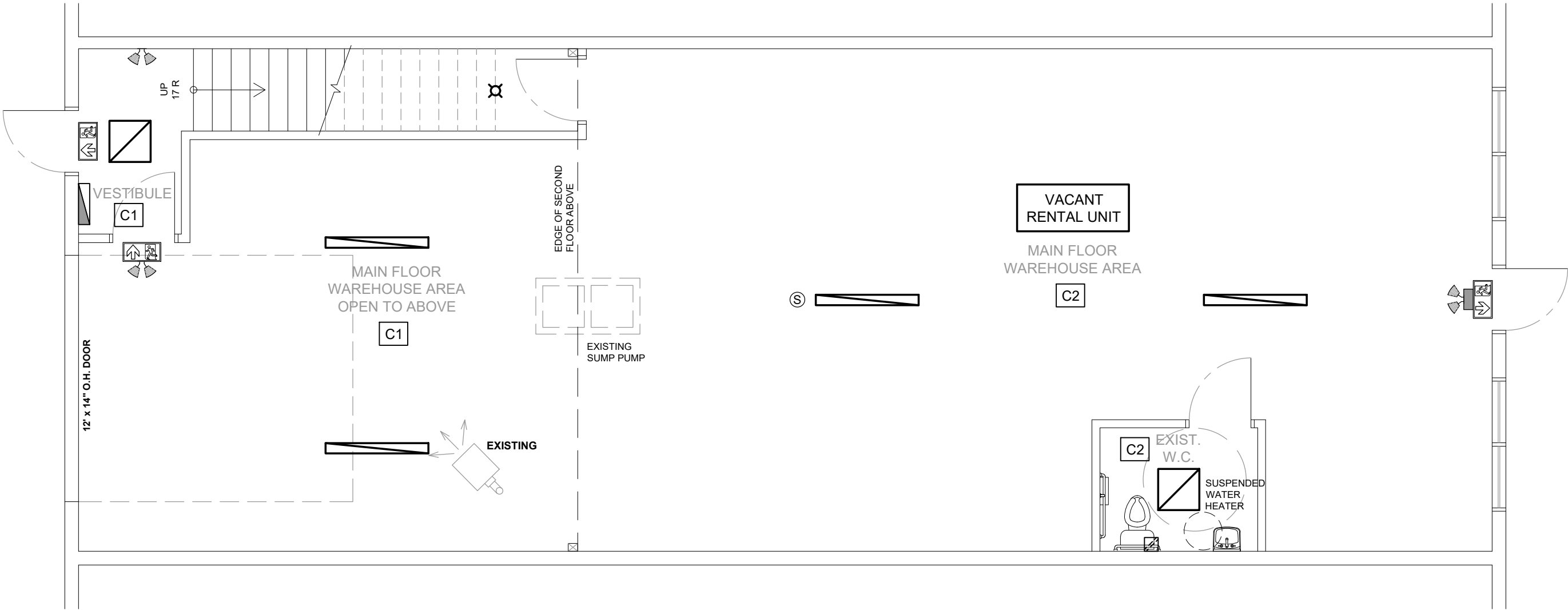
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CEILING TYPE

- C1 OPEN CEILING
- C2 45 MIN. FIRE RATED
DRY WALL CEILING

LEGEND

- 2X4 LED PANEL LIGHTING
- 2X2 LED PANEL LIGHTING
- 6" X 5' HANGING SHOP LIGHT
- CEILING LIGHT
- ELECT. PANEL
- EMERGENCY BATTERY PACK -12V
c/w 2X12S QUARTZ HALOGEN LAMP
- EMERGENCY LIGHT REMOTE HEAD
- EXIT SIGN
- SMOKE / CO DETECTOR
- EXHAUST FAN GRILLE



REFLECTED CEILING PLAN
- MAIN FLOOR

SCALE: 3/16" = 1' - 0"





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Revisions		
No.	Description	Date
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Project

MONT AIR
HEATING

UNIT 17,
240023 FRONTIER CRESCENT,
ROCKY VIEW, ALBERTA

Drawing Title

REFLECTED
CEILING PLAN
- UPPER FLOOR

Drawn By: C. L. Date: JULY 2018

Designed By: A. NG Scale: As Shown

Job Number
00000

Drawing Number
A-2.1

Rev. No.

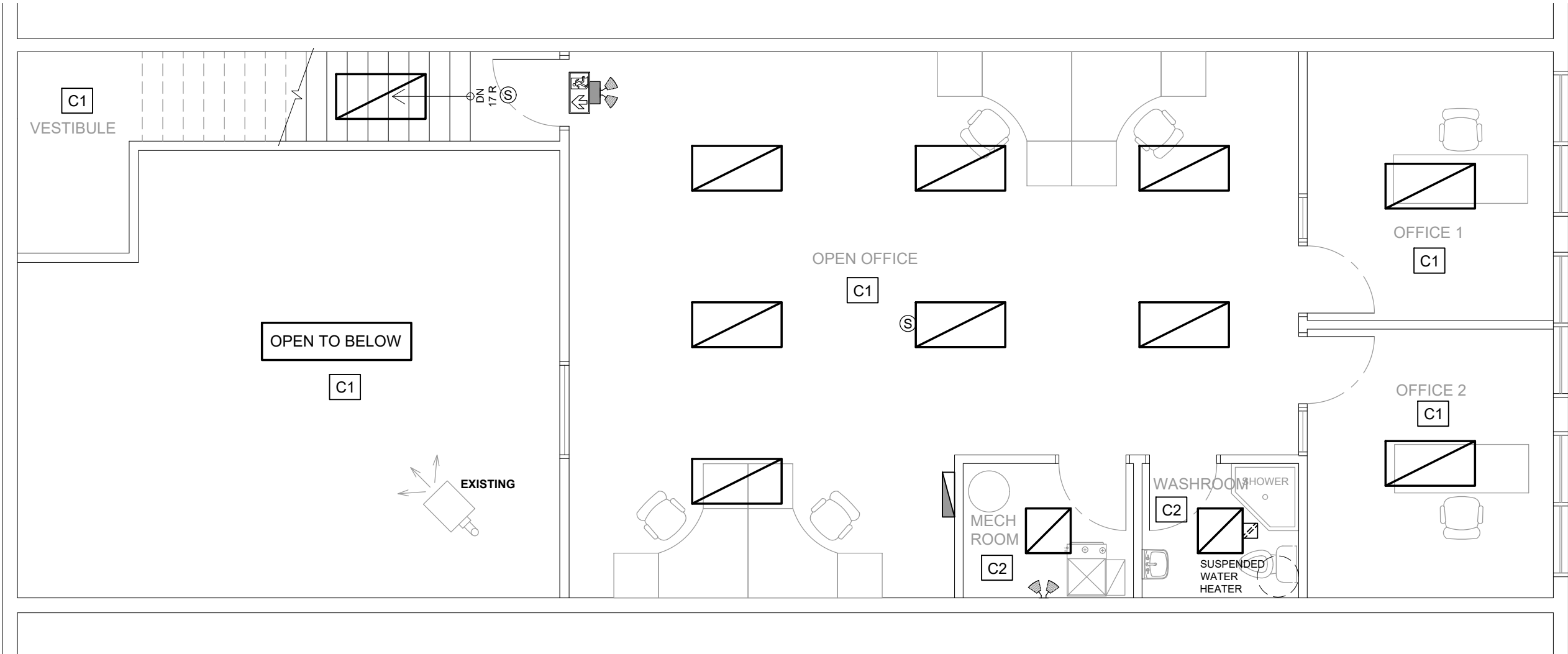
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CEILING TYPE

- C1 OPEN CEILING
- C2 45 MIN. FIRE RATED
DRY WALL CEILING

LEGEND

- 2X4 LED PANEL LIGHTING
- 2X2 LED PANEL LIGHTING
- 6" X 5' HANGING SHOP LIGHT
- CEILING LIGHT
- ELECT. PANEL
- EMERGENCY BATTERY PACK -12V
c/w 2X12S QUARTZ HALOGEN LAMP
- EMERGENCY LIGHT REMOTE HEAD
- EXIT SIGN
- SMOKE / CO DETECTOR
- EXHAUST FAN GRILLE



REFLECTED CEILING PLAN - UPPER FLOOR

SCALE: 3/16" = 1' - 0"



DIFFUSER & GRILLE SCHEDULE

	TYPE SIZE (IN.) CAPACITY (CFM)
	E.H.PRICE MODEL 24"-36"/RCD/VCR7/B12 VERIFY WITH OWNER C/W O.B.D.
	E.H.PRICE MODEL 10"x4" FOR DOWN DISCHARGE

MECHANICAL LEGEND

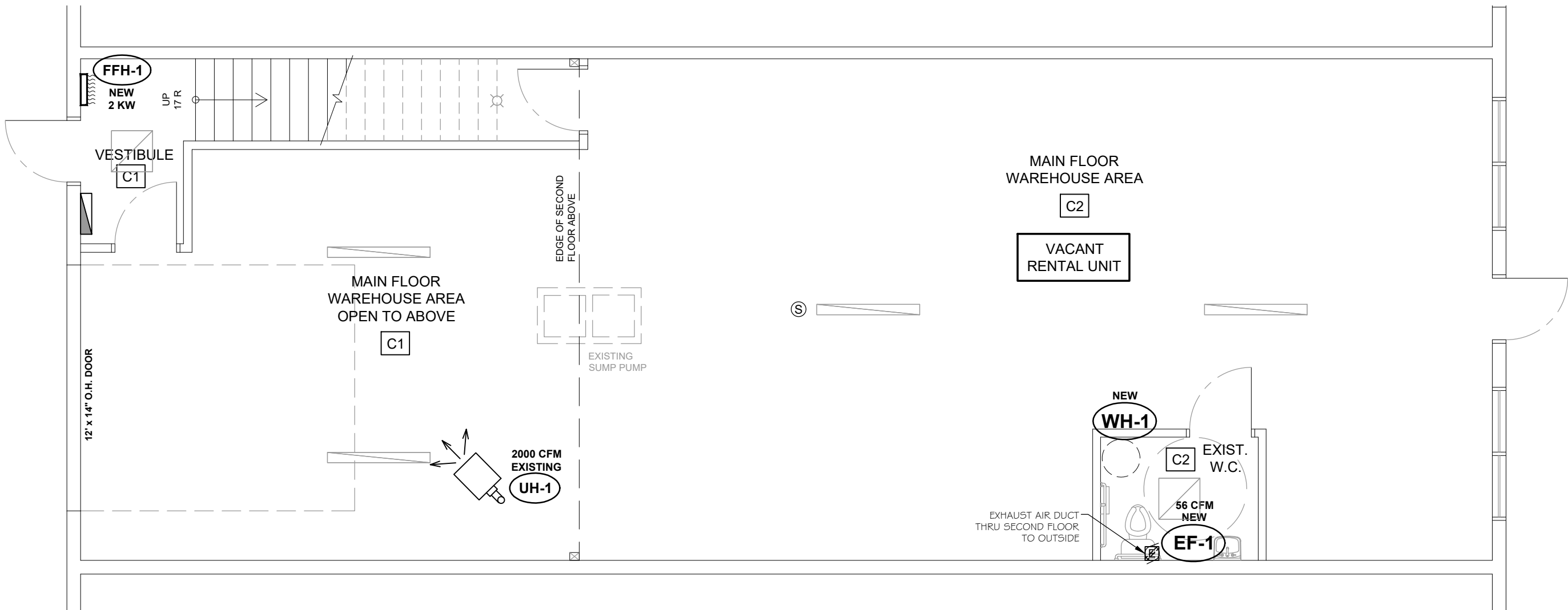
	SUPPLY AIR DIFFUSER WITH DAMPER
	THERMOSTAT
	MOTOR
	SMOKE / CO DETECTOR
	FIRE DAMPER
	EXHAUST DIFFUSER
	ELEC. PANEL

NOTE:

LOCATIONS SHOWN ARE APPROXIMATE ONLY. CONTRACTOR TO VERIFY EXACT LOCATION ON SITE. CONSULT WITH OWNER AND TO SUIT T-BAR AND FURNITURE LAYOUT IF REQUIRED.

CEILING TYPE

C1	OPEN CEILING
C2	45 MIN. FIRE RATED DRY WALL CEILING



HVAC PLAN
- MAIN FLOOR

SCALE: 3/16" = 1' - 0"



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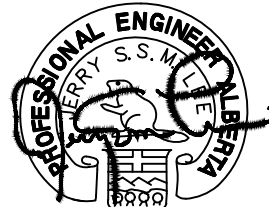
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Consultant

Jerry Lee
Consulting services
Tel: (403) 466-3268
Email: jerrylee.P.Eng@gmail.com

Stamp



August 02, 2018

AUG 02, 2018
FOR BP

No.	Description	Date
0		

Project

MONT AIR
HEATING

UNIT 17,
240023 FRONTIER CRESCENT,
ROCKY VIEW, ALBERTA

Drawing Title

HVAC PLAN
- MAIN FLOOR

Drawn By: C. L. Date: JULY 2018

Designed By: A. NG Scale: As Shown

Job Number: 00000

Drawing Number: M-1.0 Rev. No.



PLUMBING LEGEND

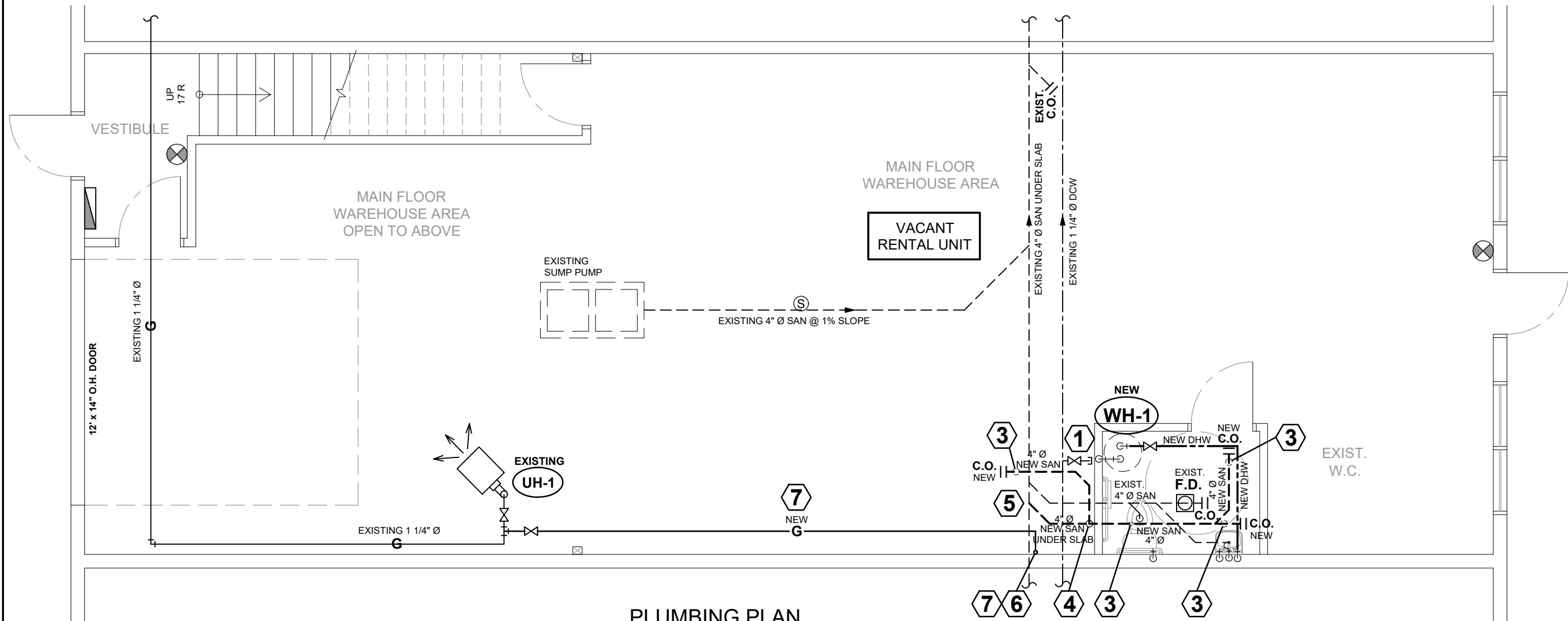
- DOMESTIC COLD WATER
--- DOMESTIC HOT WATER
--- SANITARY LINE
--- G GAS LINE
□ FLOOR DRAIN
X GATE VALVE/
BALL VALVE
~ DUCT BREAK
Q P-TRAP
○ PIPE RISE
○ PIPE DROP
|| CLEAN-OUT
└ CAP
⊗ FIRE EXTINGUISHER

PLUMBING KEY NOTES

- ① CONNECT DCW TO EQUIPMENTS. SITE VERIFY LOCATION.
② NEW SAN. PIPE DOWN TO MAIN FLOOR.
③ SAN. PIPE FROM UPPER FLOOR RUN ALONG MAIN FLOOR CEILING, TO BE CONNECTED WITH EXISTING SAN. LINE UNDER SLAB.
④ NEW 4" VERTICAL SAN LINE.
⑤ CONNECT NEW 4" SAN LINE TO EXISTING 4" SAN LINE UNDER SLAB.
⑥ NEW GAS LINE UP TO SERVE UPPER FLOOR.
⑦ RUN NEW GAS LINE WITH MIN. --- btuh TO FEED NEW FURN-1 AND WH-2 ON UPPER FLOOR. CONTRACTOR TO VERIFY GAS METER TO PROVIDE ENOUGH MBH TO FEED EQUIPMENTS. SITE VERIFY GAS METER LOCATION.

PLUMBING NOTES:

- ① CONTRACTOR TO VERIFY LOCATION OF ALL PLUMBING FIXTURES PRIOR TO ROUGH-IN, INSTALL AND COORDINATE ON SITE.
② CONTRACTOR TO CONFIRM LOCATION OF ALL EXISTING UTILITIES & NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
③ ALL WORK TO CONFIRM TO THE COUNTY OF ROCKY VIEW STANDARD SPECIFICATIONS FOR PLUMBING, WATER MAINS AND SEWER CONSTRUCTION CURRENT EDITION.
④ ALL TRENCH BACKFILL TO BE COMPACTED TO 98% STANDARD PROCTOR DENSITY AT OPTIMUM TO +3% OF OPTIMUM MOISTURE CONTENT.
⑤ LOCATIONS OF PIPES AND DUCTWORK SHOWN ARE FOR REFERENCE ONLY, CONTRACTOR TO VERIFY PRIOR TO COMMENCEMENT OF WORK.
⑥ NOT USE.
⑦ PLUMBING CONTRACTOR TO PROVIDE PLUMBING VENT, ISOLATION VALVE, CLEAN OUT, ACCESS PANEL AND BACKFLOW PREVENTER WHERE REQ'D AS PER LOCAL PLUMBING CODE, EQUIPMENT MANUFACTURED ALSO CITY INSPECTION.



PLUMBING PLAN
- MAIN FLOOR

SCALE: 3/16" = 1' - 0"



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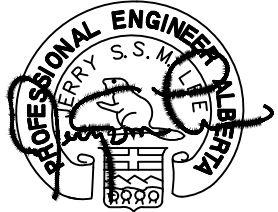
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M GROUP WITHOUT DELAY.

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Stamp



August 02, 2018

AUG 02, 2018
FOR BP

Revisions		
No.	Description	Date
0		

Project

MONT AIR
HEATING

UNIT 17,
240023 FRONTIER CRESCENT,
ROCKY VIEW, ALBERTA

Drawing Title

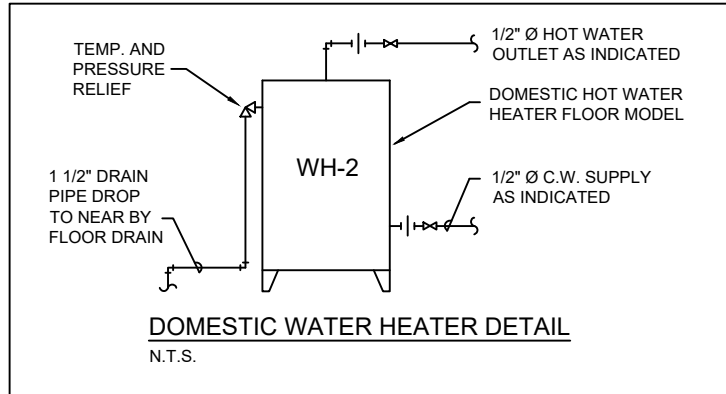
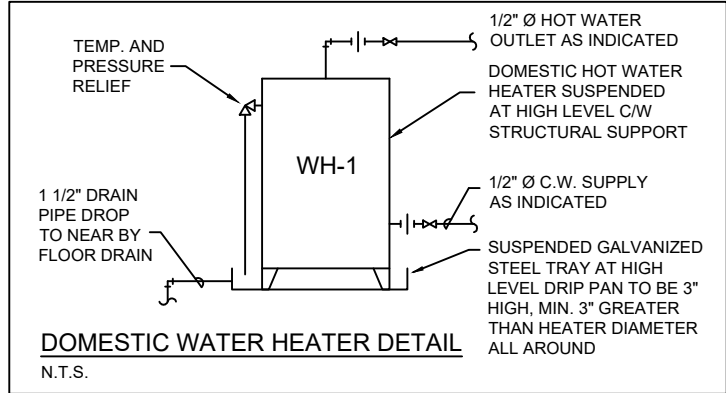
PLUMBING PLAN
- MAIN FLOOR

Drawn By: C. L. Date: JULY 2018

Designed By: A. NG Scale: As Shown

Job Number: 00000

Drawing Number: M-2.0 Rev. No. 0



ELECTRIC WATER HEATER SCHEDULE (NEW)									
TAG	MFR.	MODEL	CAP. GAL / L	INPUT (KW)	ELECT.	RECOVERY / HOUR @ 100° F RISE	WEIGHT (LBS)	DIA.	HT.
WH-1	AO - SMITH	DSE	20G/76L	18	208 / 3 /60	74 GAL.	130	20 1/2"	27 1/4"

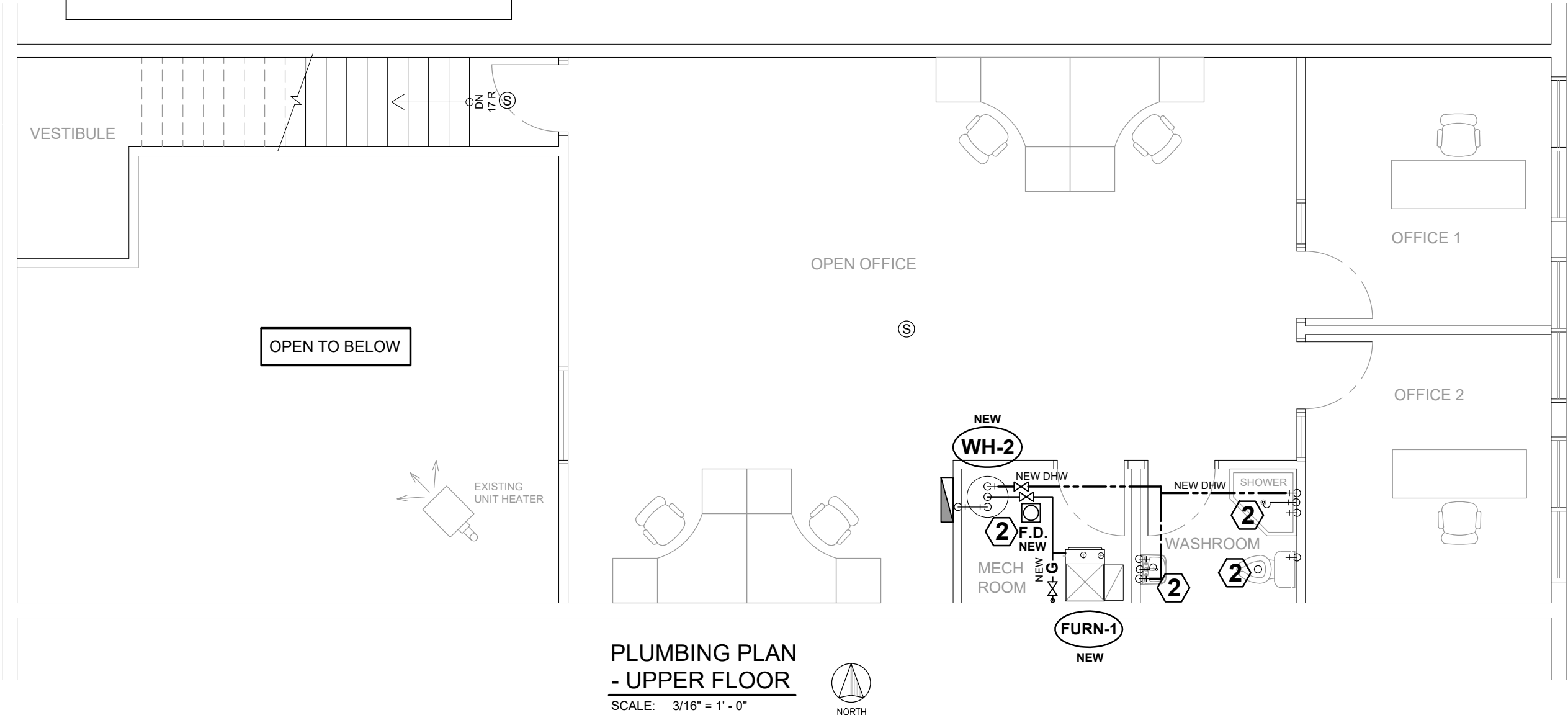
REMARK: CEILING MOUNTED. TANK DRAIN AND RELIEF ARE PIPED TO NEAREST FLOOR DRAIN.

GAS WATER HEATER SCHEDULE (NEW)								
TAG	MFR.	MODEL	CAP. (US GAL / L)	INPUT	RECOVERY / HOUR @ 100° F RISE	HEIGHT	DIA.	THERMAL EFFICIENCY
WH-2	AO - SMITH	GPHE-50 GAS	50 / 189.27	76,000 btuh	1st HR RISE 127	70 5/8"	22"	90 %

REMARK: FLOOR MODEL WATER TANKS DRAIN AND RELIEF ARE PIPED TO NEAREST FLOOR DRAIN.

EQUIPMENT & PLUMBING FIXTURE PIPING HOOK-UP SCHEDULE						
QTY.	EQUIPMENT / FIXTURE	C.W.	H.W.	SAN	VENT	REMARKS
1	water closet (barrier-free)(existing)	13 Ø	-	100 Ø	40 Ø	T.B.C with owner
1	water closet	13 Ø	-	100 Ø	40 Ø	T.B.C with owner
1	lavatory (barrier-free)(existing)	13 Ø	13 Ø	40 Ø	30 Ø	T.B.C with owner
1	lavatory	13 Ø	13 Ø	40 Ø	30 Ø	T.B.C with owner
1	stand shower	13 Ø	13 Ø	40 Ø	30 Ø	T.B.C with owner
2	water heater (WH-1) (WH-2)	13 Ø	-	-	-	T.B.C with owner
2	floor drain (1 existing)	-	-	75 Ø	-	T.B.C with owner

EQUIPMENT GAS CONSUMPTION LIST				
QTY.	DESCRIPTION	EXISTING	NEW	CONNECTION
1	UH-1 (unit heater)	165,000 btuh		
1	FURN-1		44,000 btuh	ref. to manual
3	WH-2		76,000 btuh	ref. to manual
sub-total :		165,000 btuh	120,000 btuh	
total :		285,000 btuh		



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Stamp

PROFESSIONAL ENGINEER
JERRY S.S.M. LEE
ALBERTA
August 02, 2018

AUG 02, 2018 FOR BP

Revisions

No.	Description	Date
0	-	-

Project

MONT AIR HEATING

UNIT 17,
240023 FRONTIER CRESCENT,
ROCKY VIEW, ALBERTA

Drawing Title

PLUMBING PLAN - UPPER FLOOR

Drawn By: C. L. Date: JULY 2018
Designed By: A. NG Scale: As Shown
Job Number: 00000
Drawing Number: **M-2.1** Rev. No. 0

MECHANICAL SPECIFICATIONS

1.01 Related Requirements

- Summary of Work Division 01
- Utility Service Connections Division 01
- General Instructions Division 01
- Submittals Division 01
- Quality Control Division 01
- Temporary Services Division 01

1.02 Reference Standards

- Alberta Building Codes.
- Local and Municipal building regulations.
- National Fire Protection Act.

1.03 General Requirements

- The Mechanical drawings and these specifications are complementary to each other, should and discrepancies occur between the drawings and specifications, the more restrictive conditions of the two will apply, unless a written ruling was obtained from the Engineer at least five (5) working days before tender closing.

- This section contains requirements which are applicable and supplementary to all sections of the Division and shall read as an integral part of each and all of the sections in this Division.

- The General Requirements, Division 1, shall form part of this Division, the instructions to Bidders (Tenders) Agreement, the General Conditions of the Contract, Amendments thereto and General Requirements apply to and govern the work of this Division.

- The Mechanical Contractor shall supply all labour, materials, tools, equipment, transportation required for the complete installation, wiring and testing of the systems shown on the drawings and described herein.

- Co-operate with other sections as required for the completion of the work.

- The mechanical drawings indicate the general location and route to be followed by pipings and ductwork and do not show all architectural, structural, and electrical details. Fittings not shown on the plans or shown diagrammatically in schematic or riser diagrams, shall be installed to provide a complete operating system and shall be installed physically to conserve head room, turning spaces, etc.

- The mechanical trade is expected to follow the architectural, structural and electrical drawings for details of this work and shall install piping, ductwork and fittings to co-ordinate with architectural, structural and electrical work and details. For any information involving accurate dimensions of the building, reference shall be made to the architectural, structural drawings. Mechanical trade shall make, without additional charge any necessary changes or additions to the mechanical work to accommodate structural and architectural conditions as built including any required redesign.

- The General Contractor is completely and solely responsible for allocating the work between trades or sub-contractor.

- Claims for extra payment will be rejected when based upon grounds of difference in interpretation of specifications as to which trade or sub-contractor provides a portion of the work. Where a portion of the work of this Division conflicts or is incompatible with the work of others, a ruling by the General Contractor, resolving the conflict must be obtained before proceeding the affected work.

- Materials are to be new, not inferior to the quality specified, and conform to CSA Standards.

- Where materials are specified by technical description they shall be the best commercial qualities obtainable for the purpose.

- Execute work in a neat and orderly manner. To the satisfaction of the Engineer.

- Keep a competent Foreman on the job during the progress of the work to ensure a neat and professional appearance on completion. The Foreman who starts the work shall not be changed unless satisfactory reasons are given.

- Inform Engineer of all inspections by Authorities at least 48 hours in advance of inspections.

- Render all necessary assistance to the Engineer, furnish all measurements to him and assist him on his visits to the job at any phase including after completion of the work.

- Tradesmen thoroughly qualified and experienced must be employed to carry out specialized work such as: motor controls, audible and visual signalling systems, and intercommunication systems.

- No deviation from the drawings shall be permitted without written authorization from the Engineer.

- All work and materials covered by these specifications shall be subject to inspection at any and all times by the Engineer or the Owner's representative.

- If the Engineer or the Owner's Inspector finds that any material does not conform to these specifications, the Mechanical Contractor shall, within three (3) days after being notified by the Engineer or Owner, remove the material from the premises.

- Maintain uniformity of manufacture, type and style, within a particular group or class of equipment throughout the work.

- No consideration will be given to requests for extra money, extra time or equipment substitution due to late ordering of material.

- The term 'Provide' shall mean to supply & install.

- Temporary heat - General contractor shall be responsible for provision of temporary heat. The permanent heating shall not be allowed to use for temporary heating during construction without written permission of the Engineer.

1.04 Shop Drawings

- Prior to ordering of any equipment this Contractor shall submit, four (4) copies of shop drawings and detail drawings, for the review by the Engineer, the Engineer shall then return three (3) copies of the reviewed shop drawings to the Contractor. Shop drawings shall be submitted on all major equipment.
- The sub-contractor must re-submit shop drawings to the Engineer for checking if required by the latter.
- Show details of construction, dimensions, capacities, weights, all electrical data and performance characteristics, on shop drawings.
- All wiring diagrams and control schematics as required must also be included.

- Submit shop drawings to relevant authorities for approval prior to submission to the Engineer.
- All shop drawings submitted to the Engineer must bear the Contractor's and authorities approvals (if required).

- All shop drawings shall bear the name of the Manufacturer and/or Manufacturer's representative.

- Shop drawings approval procedure shall be as follows: The sub-contractor must review all shop drawings, including the shop drawings submitted by his trade and/or by the Equipment Manufacturers, and stamp or mark the work "Approved", show the date the approval was made, the firm name of this section and the checker's initial.

- Approval of the shop drawings given by the Mechanical Contractor means that:

- The equipment meets in every respect the requirements stated in the specifications and on the drawings.
- The quantities of fixtures or equipment, if indicated on the shop drawings are correct.
- The physical dimensions of the equipment or fixtures are such that they can be installed without interference with building structures or other equipment, and that after installation, there is sufficient clearance around the equipment and/or fixtures for expansion and contraction, proper maintenance, servicing and operation of the equipment and/or fixtures.

- Work shall not proceed with any of these items until the Engineer's reviews is complete and stamped drawings have been returned.

- The stamped and reviewed shop drawings will not relieve the Mechanical Contractor of the full responsibility of correctness of dimensions, quantities and compliance with the the contract documents.

- This review by the Engineer is for the sole purpose of ascertaining conformance with the general design concept, this review shall not mean that the Engineer approves the detail design inherent in the shop drawings, responsibility for which shall remain with the section submitting same, and such review shall not relieve the mechanical sub-contractor of responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirement of the Contract Documents. This sub-contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of the work with all sub-trades.

1.05 Permits, Certificates and Fees

- On completion of the work submit a Certificate of Acceptance from Inspection Authority to the Engineer.
- Pay all associated fees, and obtain documents posting as required.

1.06 Record Drawings

- Maintain at the job site one set of prints on which is recorded, day-by-day, all outlets, piping, ductwork, and equipment as installed, together with any changes made to the work.

- Mark up "as-built" drawings shall be at least weekly. Checking of progress on the preparation of the record drawings will be carried out by the supervising Engineer regularly.

- Upon completion of the work obtain from the Contractor one set of reproducible sepiu prints, or PDF Cadd files and hire a qualified draftsman to transcribe all the information from the prints including changes due to addenda, change orders, or job site conditions, mark these "as-built" and turn over to the Contractor for submission to the Architect/Engineer before final payment is approved.

- Dimension underground services installed relative to the structure, clearly dimension and mark, to ensure ease of locating at future date, all concealed conduits and/or other equipment.

- Refer to Division 1 "Supplementary Conditions" for further information on "as-built" drawings.

1.07 Start Up

- Instruct personnel in operation, care and maintenance of installation, at a time arranged with the Engineer/Owner's representative.
- Where specified herein, arrange and pay for the services of the Manufacturer's service Engineer to supervise start-up installation, check, adjust, balance and calibrate components. Provide these services as often as necessary to put installation in working order and ensure that operating personnel are conversant with all aspects of operation, care and maintenance.

1.08 Alternates

- All materials or equipment called for on the drawings and in the specifications by Trade Names or by Catalogue reference numbers, are the materials upon which this Tender is to be based. All equipment must be installed as shown on the Drawings and in accordance with the Manufacturer's recommendations. Request for approval shall be accompanied by complete specifications of proposed substitution, showing dimensions, ratings, capacities, cost reduction, etc. It shall be this Sub-Contractor's responsibility to make and allow for any changes or charges which will occur if he wishes to submit alternate equipment. No substitution by this Contractor will be permitted after the closing of the Tenders. The approval of

any equipment shall rest with the Engineer and his judgement shall be final. Any equipment or material that was not previously been approved by the Engineer and installed on the job, shall be removed at no cost to the Owner and suitable material shall be substituted in it's place. It will be the Sub-Contractor's responsibility to supply equipment to perform the function as required and laid out in the plans and specifications. Construction of the project shall conform to the sealed Contract Drawings and specifications. All changes must be approved in writing. Unauthorized modifications shall review the Engineer of expressed stated or implied professional liability.

- Within fourteen (14) days of the Award of the Contract submit a complete list of proposed mechanical equipment and catalogue numbers to the Engineer. The list shall include the Manufacturer, assembler, supplier, etc. for all other equipment.

- The Engineer reserves the right to accept or reject any alternatives proposed without explanation.

1.09 Guarantee

- The work is complete but before final payment, furnish to the Owner a written guarantee that for one (1) year from the Date of Acceptance, any defects in materials or workmanship will be corrected at no cost to the Owner, except where in the opinion of the Engineer, such defects are due to mis-use or neglect by the Owner.

- The period of this Guarantee shall in no way supercede any other guarantee of longer period but shall be binding on all other work not otherwise covered.

1.10 Damage to Others Work

- This Sub-Contractor will be held rigidly responsible for all damages to the work in his own or any other trades resulting from the execution of his work.

- Full responsibility for laying out his work and carrying out same shall be assumed by this Sub-Contractor so that they will not conflict with other tradesmen, and he shall also be liable for any damage caused by him to the Owner's or other Contractor's equipment. Visit the site and examine the existing conditions to ensure that all details are included and to determine the working conditions, before tendering. No extras will be paid due to site conditions.

1.11 Sub-Contractor's Shop

- This section shall provide it's own workshop, tool shop and office space and shall be responsible for any damages or losses therein. The location of this shop and all storage areas for materials and equipment shall be subject to the approval of the General Contractor.

1.12 Final Inspection

- Prior to the Contractor requesting an inspection for substantial performance, all the following items must be provided:

- maintenance manuals to be submitted and approved.
- record drawings.
- all systems shall be certified in writing by the Contractor as complete and fully operations.
- a complete list of items which the Contractor has not finished, or all deficient, shall be provided. If, in the opinion of the Engineer, this list indicates the project is excessively incomplete, a substantial completion inspection will not be performed.

1.13 Builder's Work

- This Sub-Contractor shall provide where necessary, sleeves, inserts, etc. if any cutting and repair of finished or unfinished work is required, this Sub-Contractor shall hire the General Contractor to do this work and shall pay for same. This Sub-Contractor shall remain responsible for the progress of the work, any surplus materials or waste materials and shall leave the work area in a clean condition. All inserts required to be cast in concrete shall be placed before pouring of any concrete and shall be supplied by this Sub-Contractor and installed by the General Contractor.

- It shall be the responsibility of this Sub-Contractor to see that any of the above devices are placed in the correct locations.

- Failure to comply with the above provisions shall be remedied at the expense of this Sub-Contractor to the complete satisfaction of the Owner and the Engineer.

1.14 Temporary and Trial Usage

- It is especially understood and agreed that the temporary or trial usage by the Owner of any mechanical device, machinery, apparatus, equipment, or any other work or materials supplied under this Division, is not to be construed as evidence of the acceptance of same by the Owners and it is further understood and agreed that the Owners shall have the privilege of such temporary and trial usage. As soon as this Section shall claim that work is completed and in accordance with the drawings and specifications for such reasonable length of time as the Engineers shall deem to be sufficient making a complete and thorough test of same, and that no claim for damage will be made by this Sub-Contractor for the injury to or breakage of any parts of such work which may be so used, whether caused by weakness or inaccuracy of structural parts or by defective materials or workmanship of any kind whatsoever.

1.15 Temporary Service

- All temporary services shall be as described in the General Conditions, Division 01.
- All concrete work and reinforcing required for equipment bases, pads, foundations, etc. shall be provided and installed by the General Contractor.

1.16 Excavation and Backfill

- All excavation and backfill required for the Performance of the Work in this Division is included in the General Conditions.
- It shall be the responsibility of this Sub-Contractor to provide the Division performing the excavation with all necessary pertinent information as to width of trench, depth of trench for the proper installation of all buried pipe work.
- It shall be the responsibility of this Sub-Contractor for clearly marking out and staking of the path and directions of the required excavations and for fully coordinating the

1.17 Cutting Sleeving, Coring, Patching and Grouting

- All cutting, patching, sleeving and grouting required in the building structure, must all times be done by fully qualified craftsman of the respective trades employed or engaged by the Contractor, all cutting and patching when required for the work in this Division is included in this Sub-Contractor's tender.

1.18 Minor Field Changes

- The location, arrangement and connection of equipment and material as shown on the drawings represent a close approximation of the intent and requirements of the Contract. The right is reserved by the Engineer to make reasonable changes required to accommodate conditions arising during the progress of the work. Such changes shall be done at no extra cost to the Owner. Confirm final location prior to installation.

1.19 Installation

- This Sub-Contractor shall maintain such insurance as will fully protect both the Owner and this Sub-Contractor from any and all claims under the Workmen's Compensation Act, also all insurance as noted within the General Conditions, Division 01.

1.20 Tools and Equipment

- This Sub-Contractor shall be solely responsible for his own tools, equipment and materials supplied for the work until such time as materials and equipment has been built into the work and accepted by the Engineer. After the equipment or materials has been installed provide proper protection for the equipment to avoid damage by this Division or other Divisions.

1.21 Extras and Credits

- Alterations entailing additions to or deletions from the work shall be carried out upon written request of the Engineer and will be settled in the following manner.

- Labour: This Sub-Contractor shall submit a list of materials and labour unit cost that is to be approved for use in assessing all altered work for the project.

- Materials: This Sub-Contractor shall be allowed to charge for materials at net cost only.

- Overheads and Profits: To be specified in Contract Documents/Division 01.

- Submit for approval, detailed analysis sheets, for extra work itemizing labour charges and hours, material quantities, prices, units and totals.

- When requested by the Engineer, invoices, time sheets and other evidence of cost shall be provided to justify charges for additional work.

- Any requests for extra payment not submitted in accordance with the above, will be automatically rejected.

1.22 Cleaning

- At the completion of the work a complete and thorough cleaning up shall be done not only on the surfaces of all equipment and fixtures. Final cleaning of surface and interior dusting to all equipment, apparatus & ductwork shall be done with an industrial type vacuum cleaner. Apply touch up paint to damaged surfaces as directed by the Engineer.

1.23 Special Requirements

- The sub-contractor shall flash, counterflash and provide sleeves for all piping through exterior building envelope and shall supply & set all sleeves for the project.

- All piping and ductwork penetrate a membrane forming part of an assembly (fire-rated) shall be either tightly fitted or sealed by a fire stop system that, when subjected to the fire test method, in CAN/UL-15,M, has a F rating not less than the fire protection rating of the assembly.

1.24 PLUMBING

- The plumbing system for this work shall include all cold and hot water distribution, domestic hot water heating, vents and wastes, floor drainage and gas distribution and all necessary site work plumbing items indicated on the drawings, described in these specifications, or needed for a complete and operating installations.

- Perform all trenching and backfilling associated with the plumbing installation in strict accordance with Architectural and Structural specifications.

- Entire plumbing installation shall meet all Provincial, National and Local Codes.

- Prior to all work of this section, carefully inspect the installed work of other trades and verify that all such work is completed to the point where this installation may commence. Verify that the completed plumbing installation will be in accordance with all pertinent Codes and Regulations and the original design. In the event of discrepancies, notify the Architect and Engineer and proceed as they direct.

- Do not cover up or enclose work until it has been properly and completely inspected and approved, should any work covered up or enclosed prior to all required inspections and approvals, uncover the work as required, and make any repairs at no extra cost to the Owner.

- The Mechanical Contractor shall verify inverts of town sewers before excavating building mains. All sanitary sewers shall have a minimum slope of 2% or unless otherwise specified. Sanitary piping shall be cast iron pipe and fittings class 4000 with plain ends and mechanical joints or approved equivalent for pipe sizes 50mm (2") and up. Smaller sanitary and vent piping shall be copper "DWV" or galvanized steel pipe or approved equivalent. No combustible piping is allowed inside the building fire separations except permitted by code. P.V.C. or A.B.S. piping may be permitted in areas where approved by the authorities having jurisdiction. All copper drainage (DWV) piping are to be certified to comply with the appropriate ASTM Standards.

- All gas line installation shall comply with local codes. Gas piping shall be black steel pipe sch.40 complete with screwed fittings and valves for pipe size up to 50mm (2") and welded fittings and flanged valves for pipe sizes 65mm (2-1/2") and up. Gas piping inside ceiling space used as a return air plenum shall be identified.

- Domestic water piping shall be copper type "L" hot drawn copper tubing with stream lined fittings on pipe 20mm (3/4") and smaller and cast brass fittings on pipe 25mm (1") and larger. 955 solder shall be used up to 50mm (2") in diameter. For buried pipe under slab, use type "K" joint free soft copper pipe or approved municipal water tubing. All copper water piping are to be certified to comply with the appropriate ASTM Standards.

- Isolate between steel pipe and copper pipe or vessels or any steel components by the use of dielectric unions. Also where copper and steel pipes are in contact, isolate the pipes with rubber isolator.

- Provide 450mm (18") long air chambers or premanufactured air chambers on the hot and cold water supply lines at each group of fixtures to prevent water hammer.

- Vents through roof/wall shall be insulated with 25mm (1") thick insulation from where the pipes pass through the roof/wall for a distance of 3m (10'-0") into the building.

- Provide 12mm (1/2") thick fiberglass pipe insulation for all domestic hot and cold water piping including re-circulation pipes. No pipe insulation on hot water and re-circulation pipes at vertical riser serving suites.

- Floor drains shall be as per schedule on drawing. All cleanouts shall be full size of pipe and not less than 100mm (4") and not less than 100mm (4") for larger piping. Wall type shall be equal to Barrett type with removable cover. Floor type shall be made by using a "Y" and leaded plug with removable cap. Cleanout cover and ring assembly equal to Josam Series 8610. All cleanout cover plates in public areas shall be brass type or with depressed centre section to accommodate floor finish.
- Non-freeze hose bib, domestic hot water heaters, recirculation pump and plumbing fixtures shall be as scheduled on the drawings.

- Plumbing Fixtures : refer to schedules for specifications.
- This contractor to provide all kitchen equipment hook-ups. Refer to equipment schedules for specifications.

- Pipe Hangers:
 - Hangers and hanger rods shall be supplied and installed by this Contractor, perforated strap hangers not permitted.
 - Steel pipes up to and including 100mm (4") diameter, use steel hanger with steel ring or steel clevis.
 - Copper pipes use hanger with copper plate finish.

- Horizontal pipe support shall be sized as follows.

PIPE SIZE	ROD DIAMETER	MAXIMUM SPACING
Up to and incl. 12mm (1/2")	10mm (3/8")	1.8m (6'-0")
20mm (3/4") to 25mm (1")	10mm (3/8")	2.5m (8'-0")
30mm (1-1/4") to 50mm (2")	10mm (3/8")	3.0m (10'-0")
65mm (2-1/2") to 80mm (3")	12mm (1/2")	3.7m (12'-0")
100mm (4") and up	16mm (5/8")	3.7m (12'-0")

- Valves in Water Lines:
 - Valves shall be installed as indicated on the drawings, as specified and as may be required to complete any of the piping system for proper isolation.
 - For shut-off services on piping and branch lines up to 50mm (2"), use Jenkins #810 or #30 bronze valves with screwed ends. 65mm (2-1/2") and over use Jenkins #454.

- Valves in Gas Lines:
 - Gas gas up to 1.74kpa (7"w.g.), 50mm diameter size use Jenkins #122; 65mm (2-1/2") and over use Nordstrum #142.
 - Gas 34.5kpa (5 psi) up to and including 50mm (2") diameter, use Nordstrum #142; 65mm (2-1/2") and over, use Nordstrum #143.

- Supply & install 1" fiberglass insulation for all sanitary line in public area for sound control.
- Supply and install plumbing vent as per local plumbing code requirement.

- Sanitary stacks are to be cast iron, PVC domestic plumbing vent within the units, flow guard water pipe can be used where permitted by local plumbing code.

1.25 HEATING and VENTILATION

- Provide all necessary labour, materials and equipment to furnish heating, ventilation and air conditioning system as shown on the mechanical drawings and as specified herein.

- Ventilating system shall be completely balanced by qualified personnel to handle air quantities as indicated on the drawings. Provide all necessary gauges, pilot tubes, etc. for this purposes. Balance air quantities to within 5% from the specified values. Submit air balance report.

- The Mechanical Contractor shall supply and install all ductwork of the sizes shown on the drawings and as per ASHRAE and SMACNA recommendations.

- Duct Insulations:
 - Exhaust air ductwork shall be insulated on the exterior with 25mm (1") fiberglass or equivalent flexible foil faced duct insulation. Exhaust air ducts from where the duct passes through the roof/wall to a distance of 2m (6'-0") into the building shall be insulated.

- Combustion air ductwork and fresh air ductwork shall be insulated with 50mm (2") thick fiberglass vapour-seal rigid duct insulation with type foil faced aluminium foil vapour barrier, provide interior insulation has not been applied. This insulation shall be attached with screw and cap. After the insulation has been applied, all holes in the vapour barrier shall be sealed with Benjamin Foster 60-30N mastic. Butted joints to be sealed with 100mm (4") ARNOC-442 2 mil aluminium foil pressure sensitive tape. All joints with exposed insulation same as above but with tape width 50mm (2") greater than insulation thickness.

- Supply and install 25mm (1") acoustic insulation on supply air plenum whether it is indicated on the drawings or not. Acoustic insulation shall be based on "ULTRA-LITE", "JOHNS-MANVILLE", "LINK-A-CUSTIC", "FIBERGLAS", "SEMI-RIGID" minimum 24kg/m³ (1.5 lb/cu.ft.).

- Ductwork exposed to outdoor condition shall be insulated with 2" rigid insulation c/w asphalt paper cover over insulation with lapped and sealed joints and protected with light gauge sheet aluminum lapped and held in place by banding.

- Supply and install 1" thick fiberglass duct insulation on all ductwork serving heating and air conditioning system (except in pool area).

- Provide "Metalbestos" type "B" vent chimney where shown on drawings, approved by the department of labour, ULC listed, and be complete with all necessary accessories such as belmont top, roof flashing, storm collar and base T. The chimney shall be at least 1m (3'-0") above roof level or any adjacent structure within 3m (10'-0") away.

- Ducts penetrating fire separations are to be protected with fire dampers installed complete with angle irons, breakaway connections, access panel and gip. Duct penetrating a ceiling membrane required to have a fire resistance rating are to be protected with fire stop flaps not larger than 930 sq.cm. (144 sq.in.) or closer together than 2m (6.56 ft.)

- Provide hand balancing dampers in ductwork as needed or as indicated on the drawings. Hand balancing dampers shall be fabricated in galvanized iron 2 gauge heavier than that of the duct in which this damper is to be installed.

- Hangers for all duct shall be constructed from 14 gauge by 25mm (1") galvanized strips. Hangers shall be fastened to the underside of the slab by means of ramset driven inset or equivalent. Ducts shall not under any circumstances be supported by means of perforated ban iron.

- Provide exhaust air fans as per schedules indicated on the drawings.

- Provide gas fired make up air units and exhaust fans as indicated on the drawings.

- Provide roof top units, diffusers, grilles and louvers as indicated on the drawings.
- Provide clearance distance between in-take air and exhaust air with min. 10 foot distance or as per code.

1.26 FIRE PROTECTION

- Provide fire extinguishers as required by the fire departments. Fire extinguishers shall be Model ABC 2.2 kg (5 lb) type in recessed cabinet as indicated on the drawings.

APEX

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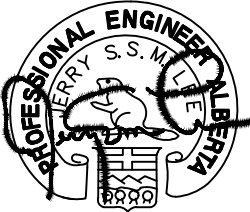
Consultant

Jerry Lee
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Email: jerrylee.P.Eng@gmail.com

Stamp



August 02, 2018

AUG 02, 2018
FOR BP

Revisions		
No.	Description	Date
0	-	-

Project

MONT AIR
HEATING

UNIT 17,
240023 FRONTIER CRESCENT,
ROCKY VIEW, ALBERTA

Drawing Title

MECHANICAL
SPECIFICATIONS

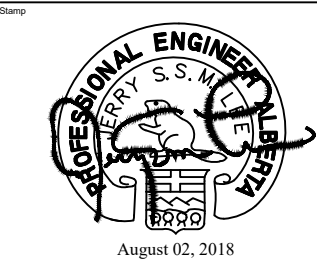


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Project
**MONT AIR
HEATING**
**UNIT 17,
240023 FRONTIER CRESCENT,
ROCKY VIEW, ALBERTA**

**LIGHTING PLAN
- MAIN FLOOR**

Drawn By: C. L. Date: JULY 2018

Designed By: A. NG Scale: As Shown

Job Number
00000

Drawing Number
E-1.0

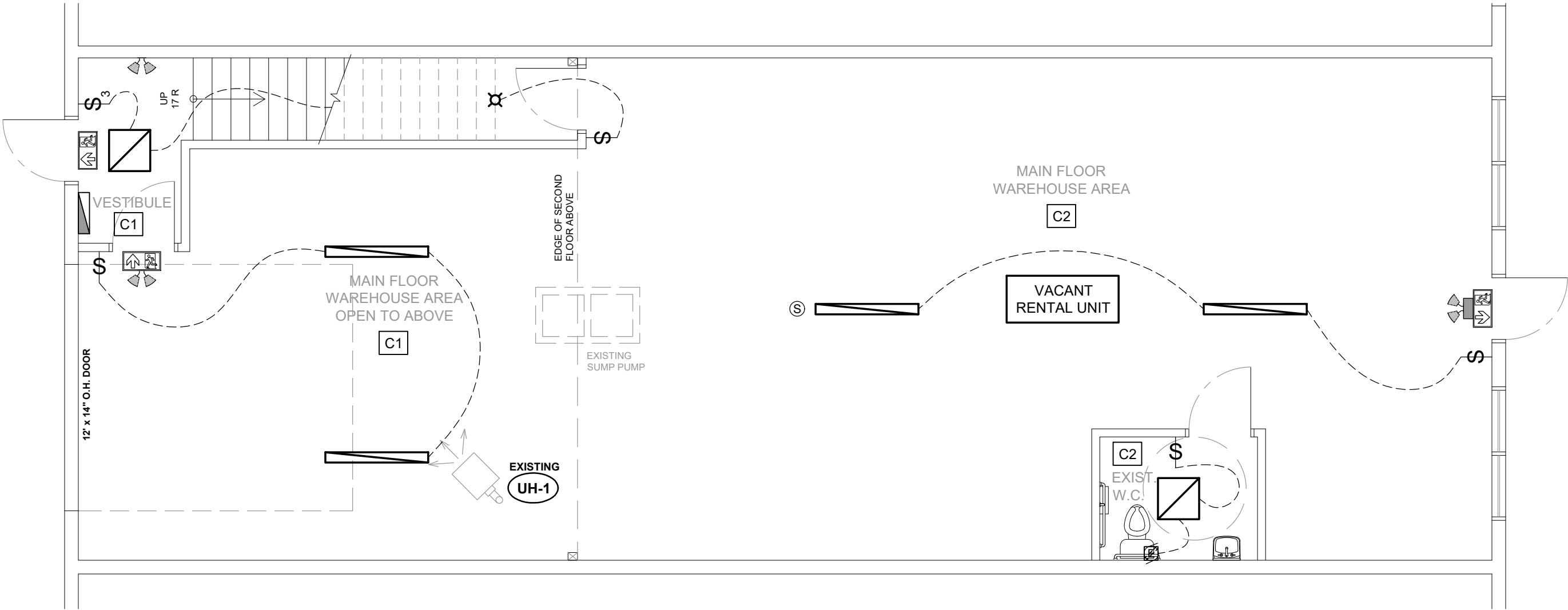
Rev. No.
0

CEILING TYPE

- C1** OPEN CEILING
C2 45 MIN. FIRE RATED
DRY WALL CEILING

LEGEND

- 2X4 LED PANEL LIGHTING
 2X2 LED PANEL LIGHTING
 6" X 5' HANGING SHOP LIGHT
 CEILING LIGHT
 SMOKE / CO DETECTOR
 ELECT. PANEL
 EMERGENCY BATTERY PACK -12V
c/w 2X12S QUARTZ HALOGEN LAMP
 EMERGENCY LIGHT REMOTE HEAD
 EXIT SIGN
 EXHAUST FAN



**LIGHTING PLAN
- MAIN FLOOR**

SCALE: 3/16" = 1' - 0"



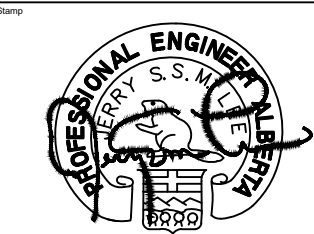


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Project
**MONT AIR
HEATING**
**UNIT 17,
240023 FRONTIER CRESCENT,
ROCKY VIEW, ALBERTA**

Drawing Title

**LIGHTING PLAN
- UPPER FLOOR**

Drawn By: C. L. Date: JULY 2018

Designed By: A. NG Scale: As Shown

Job Number
00000

Drawing Number
E-1.1

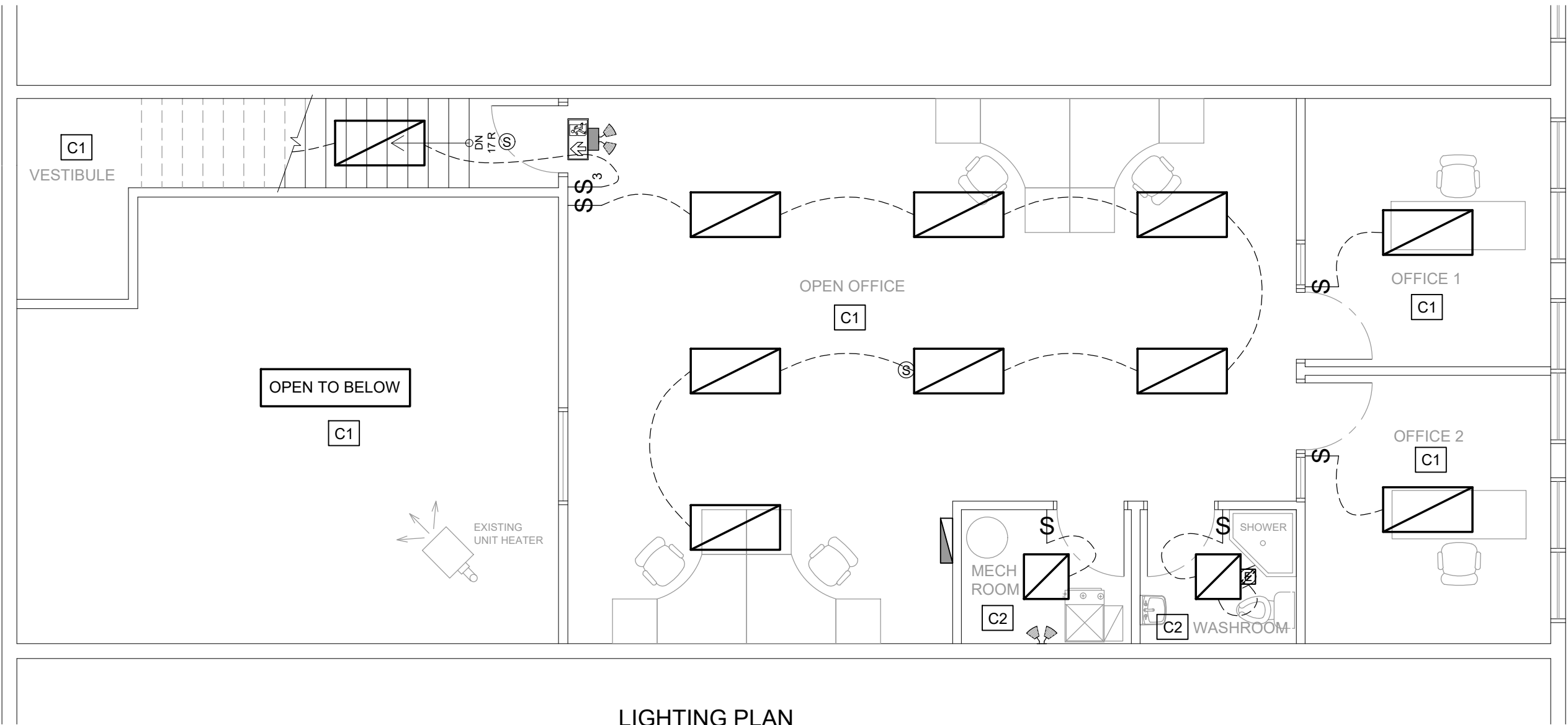
Rev. No.
0

CEILING TYPE

- C1 OPEN CEILING
C2 45 MIN. FIRE RATED
DRY WALL CEILING

LEGEND

- 2X4 LED PANEL LIGHTING
2X2 LED PANEL LIGHTING
6" X 5' HANGING SHOP LIGHT
CEILING LIGHT
SMOKE / CO DETECTOR
ELECT. PANEL
EMERGENCY BATTERY PACK -12V
c/w 2X12S QUARTZ HALOGEN LAMP
EMERGENCY LIGHT REMOTE HEAD
EXIT SIGN
EXHAUST FAN



**LIGHTING PLAN
- UPPER FLOOR**

SCALE: 3/16" = 1' - 0"



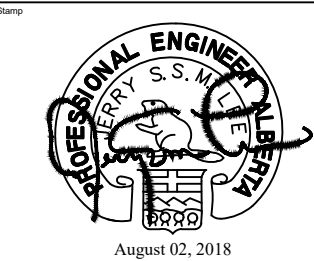


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Project
**MONT AIR
HEATING**
**UNIT 17,
240023 FRONTIER CRESCENT,
ROCKY VIEW, ALBERTA**

Drawing Title
**ELECTRICAL PLAN
- MAIN FLOOR**

Drawn By: C. L.	Date: JULY 2018
Designed By: A. NG	Scale: As Shown
Job Number: 00000	
Drawing Number: E-2.0	Rev. No.: 0

LEGEND

ELECT. PANEL

TELEPHONE

DATA

TELEVISION

SMOKE DETECTOR

FIRE EXTINGUISHER

THERMOSTAT

QUAD BOX ASSEMBLY

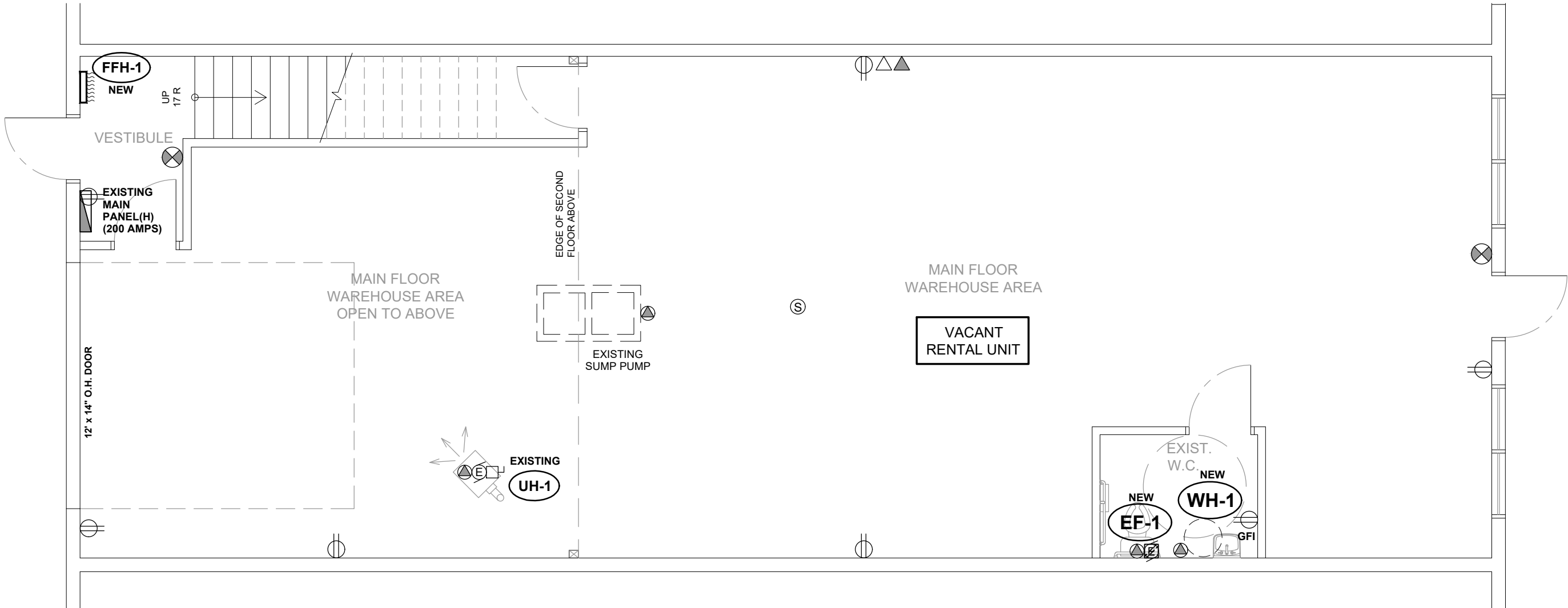
110V DUPLEX OUTLET

NON - FUSED DISCONNECT SWITCH

DIRECT CONNECTION TO EQUIPMENT
AS NOTED

MOTOR

EXHAUST FAN GRILLE



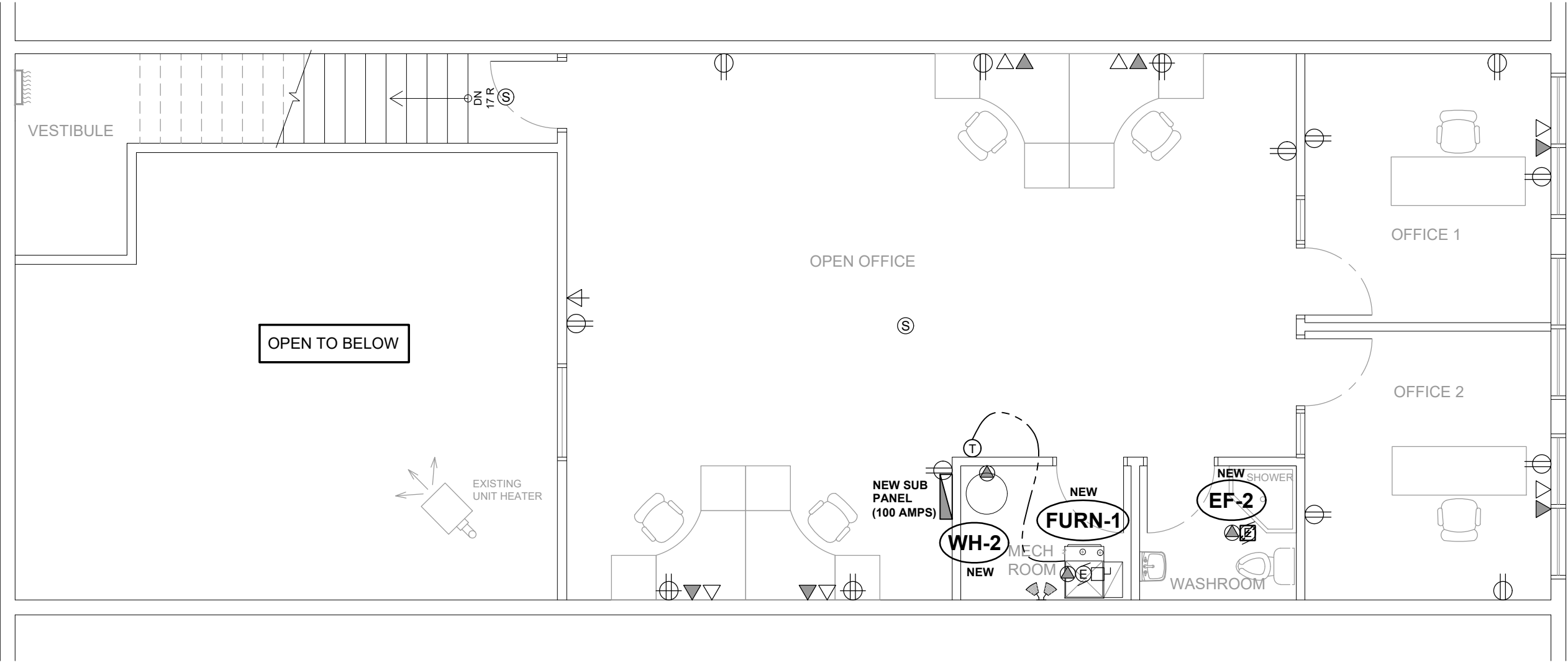
ELECTRICAL PLAN - MAIN FLOOR

SCALE: 3/16" = 1' - 0"



LEGEND

- ELECT. PANEL
- TELEPHONE
- DATA
- TELEVISION
- SMOKE DETECTOR
- FIRE EXTINGUISHER
- THERMOSTAT
- QUAD BOX ASSEMBLY
- 110V DUPLEX OUTLET
- NON - FUSED DISCONNECT SWITCH
- DIRECT CONNECTION TO EQUIPMENT AS NOTED
- MOTOR
- EXHAUST FAN GRILLE



ELECTRICAL PLAN
- UPPER FLOOR
SCALE: 3/16" = 1' - 0"

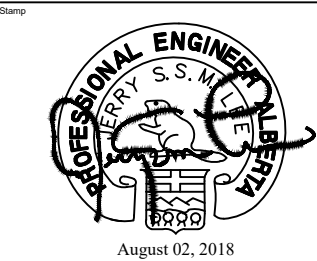


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Project
**MONT AIR
HEATING**
UNIT 17,
240023 FRONTIER CRESCENT,
ROCKY VIEW, ALBERTA

ELECTRICAL PLAN
- UPPER FLOOR

Drawn By: C. L. Date: JULY 2018

Designed By: A. NG Scale: As Shown

Job Number
00000

Drawing Number
E-2.1

Rev. No.

ELECTRICAL SPECIFICATIONS

GENERAL

1. The installation shall meet the latest Canadian Electrical Code and all Provincial and Municipal Codes and Regulations. All equipment shall be new and CSA approved.
2. The electrical trade shall pay for all fees for permits and company charges relating to the installation and approval of the work and any other incidental fees that might be incurred.
3. The electrical trade shall provide all labour and materials for and carry out the complete electrical installation of the building as shown.
4. It is the intent of these drawings to provide electrical, telephone, and other systems shown to be complete and in operating condition. Any material or equipment not specifically shown but deemed necessary shall be considered part of this contract.
5. The electrical trade shall guarantee workmanship and material for twelve (12) months after final acceptance. A certificate of approval from the inspection authority shall be delivered to the Owner as a condition of final acceptance. This general guarantee shall not waive any specific guarantee of longest duration.
6. Identify panels, and motor switches as to name and voltage with clear Kroy Duratape type 200 label c/w 10mm high black letters.
7. The electrical trade shall visit the site to familiarize and satisfy himself the condition of work and report any discrepancies to the Engineer for clarification/instruction prior to submitting the tenders.
8. Equipment and material of equal performance and quality to those specified herein may be accepted subject to written approval by the Engineer. A REQUEST FOR APPROVAL OF EQUAL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW ONE WEEK PRIOR TO THE TENDER CLOSING. LATE SUBMITTALS WILL NOT BE CONSIDERED. No request for approval by FAX will be reviewed.
9. Drawings and specification are complimentary to each other and that which is shown in one is as binding as that which is shown in both. Refer also to the Architectural, Structural and Mechanical drawings and specifications for details affecting the electrical installation.
10. The term "PROVIDE" shall mean to supply and install.
11. Any discrepancies between drawings and specifications leaving in doubt the true intent of work shall be brought to the attention of the Engineer immediately.
12. Make all necessary changes or additions to the routing of cabling and conduit/raceway to accommodate the Architectural, Structural and Mechanical conditions at no additional extra charge or expense to the Contract.
13. Submit detailed shop drawings at least two (2) weeks prior to commencement of work on all equipment to be installed on the job. All drawings submitted for approval shall be certified by the Manufacturer and checked by the Engineer.
14. Submit to the Owner three (3) type-written copies of operating and maintenance manuals which shall include description of system and equipment, start up and shut down procedure, maintenance schedule, recommended spare parts and shop drawings. Submit also as built drawings.
15. The electrical trade shall be responsible for excavation and backfilling, coring and cutting. Refer to the Architectural and Structural specifications as to the requirements.
16. After completion of this work, remove all waste materials, etc., due to work and make good all damage to building caused by this Contractor.
17. All conduit and cable penetrate a membrane forming part of an assembly (fire-rated) shall be either tightly fitted or sealed by a fire stop system that, when subjected to the fire test method in CAN5-S115-M, has an F rating not less than the fire protection rating of the assembly.

ELECTRICAL PLAN NOTE:

- ELECTRICAL CONTRACTOR TO CONFIRM EXISTING WIRING AND LIGHTING.
- LANDLORD TO SUPPLY ONE 200A MAIN PANEL AND ONE 100A SUB PANEL. (CONFIRM EXISTING PANEL ON SITE)
- ELECTRICAL REQUIREMENTS FOR ALL EQUIPMENT TO BE VERIFIED ON-SITE BEFORE ROUGH-IN. MODIFY AS REQUIRED.
- OUTLETS, TELEVISION AND TELEPHONE AS PER ELECTRICAL CODE.
- ALL ELECTRICAL LINES / CONNECTION TO BE CONCEALED FROM VIEW.
- ALL IN FLOOR CONDUIT RUNS NEED TO BE 2" DIAMETER.
- ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL ELECTRIC HEATERS AND THERMOSTATS AS SHOWN ON MECHANICAL DRAWINGS.
- ELECTRICAL CONTRACTOR SHALL EQUIP ELECTRIC HEATER WITH BUILT-IN THERMOSTATS WHERE REMOTE THERMOSTATS ARE NOT SHOWN CONTROLLING ELECTRIC HEATERS.

NOTE:

1. THE MECHANICAL CONTRACTOR SHALL INSTALL GRILLES & DIFFUSER IN RESPECT OF THE PRIORITY OF THE LIGHTING LAYOUT.
2. ALL ELECTRICAL FORCE FLOW & BASEBOARD HEATERS SHALL BE C/W TREATS AND SHALL BE SUPPLIED INSTALLED BY THE ELECTRICAL CONTRACTOR.
- ~~3. ROOF STRUCTURE MEMBERS SHALL BE DESIGNED TO ADEQUATELY SUPPORT ALL MECHANICAL LOAD & FRAMED AROUND ALL ROOF OPENING TO THE STRUCTURE ENGINEER APPROVAL.~~
4. ALL MANUFACTURE LISTED ON THE DRAWING ARE GIVEN PREFERENCE, EVEN THOUGH OTHER MANUFACTURES ARE ACCEPTABLE IF THEY PRODUCE EQUIVALENT PRODUCTS.

SERVICE

1. Landlord to provide one 200A-120/208V-3Ø-4W electrical service and a 100A sub-panel on upper floor as indicated on the drawings. Contractor to verify services and site condition prior to submit bid.

PANELS

1. Service entrance panel and panel boards as shown on drawings and schedule.

GROUND

1. Ground panel, and all equipment as per Code and Regulations.

CONDUCTORS

1. All conductors shall be copper, 600 volt insulation, TWH or R90 Xlink, min. no. 12 conductor to be used.
2. BX cable may be used for fixture drops where allowed by Code.

CONDUIT

1. All wiring shall be E.M.T. or rigid conduit as required by Code and run concealed where possible. Where exposed it shall be run neatly and parallel with building lines.

RECEPTACLES

1. All receptacles shall be white, full gange size, U grounding type, rated at 15 amp, 125 volt.
2. They shall be flush mounted, 12" above floor (6" to centre above counter) except as noted.

SWITCHES

1. Ivory , toggle, silent, 15 or 20 amp specification grade.
2. They shall be flush mounted, 42" above floor except as noted.

PLATES

1. Ivory heavy duty type except as below.

MOTORS

1. The electrical trade shall supply all motor starters, disconnects, and shall wire all line and low voltage wiring except otherwise shown. Refer to the Mechanical drawings for details and coordinate with the Mechanical Contractor in doing the work.
2. Electrical trade shall check all mechanical equipment and provide electrical protection according to actual electrical requirements.

TELEPHONE/DATA

1. Provide 4" conduit from telephone board to property line with pull wire at telephone service entrance.
2. Provide 3/4" conduit with pull wire from outlet box to nearest accessible ceiling space.

EMERGENCY LIGHTING/EXIT LIGHTING

1. Minimum size conductor is #10; maximum voltage drop 5%.
2. Battery Packs: As specified on the drawings.

LIGHT FIXTURES

1. As shown on drawings and schedule. Owner to determine fixtures, contractor to consult prior to order.

EQUIPMENT

1. Verify all equipment location, loading and type of connections prior to rough-in of conduits.
2. Provide power supply, installation and connection of feeders supplying power to all equipment as shown.

ELECTRIC WATER HEATER SCHEDULE (NEW)

TAG	MFR.	MODEL	CAP. GAL / L	INPUT (KW)	ELECT.	RECOVERY / HOUR @ 100° F RISE	WEIGHT (LBS)	DIA.	HT.
WH-1	AO - SMITH	DSE	20G/76L	18	208 / 3 /60	74 GAL.	130	20 1/2"	27 1/4"
REMARK: CEILING MOUNTED. TANK DRAIN AND RELIEF ARE PIPED TO NEAREST FLOOR DRAIN.									

APEX

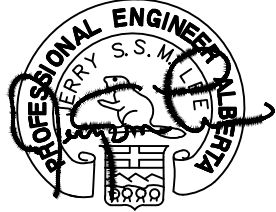
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ELECTRICAL
SPECIFICATIONS
AND NOTES

Drawn By: C. L. Date: JULY 2018
Designed By: A. NG Scale: As Shown
Job Number: 00000
Drawing Number: E-3 Rev. No. 0